

Readings in European Economic History

EDITED WITH AN INTRODUCTION

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TORONTO
THE UNIVERSITY OF TORONTO PRESS
1946

LONDON
Geoffrey Cumberlege
OXFORD UNIVERSITY PRESS

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Preface

This volume of selected readings in European Economic History has been prepared to meet an emergency. During this year, and for some time to come, very large numbers of students, the majority of them ex-service men, will crowd our lecture-rooms. They will be urged to read, they will want to read—but library facilities will be insufficient to accommodate them.

They will, of course, buy their own text-books, and will use them profitably for purposes of general orientation. Yet texts inevitably suffer from the shortcomings of small-scale sketch maps, which, while they enable the student to form an idea of the main features of a country or continent, not only lack many significant details, but are of necessity inaccurate. What is more dangerous still intellectually, text-books, like sketch maps, tend to conceal gaps in our knowledge. Lines are sometimes drawn more sharply than is warranted by the information at our disposal. Authors of text-books, justifiably, do not wish to confuse their readers by too many reservations or controversial foot-notes.

Yet students ought to be made critically conscious of different interpretations of the historical raw material. They should be made aware of the fact that our knowledge of the past is incomplete and far from certain. They should be familiarized with the problems of historical emphasis and selection; and they want to be introduced, even on an elementary level, to the methods of research. In short, it is desirable to make the student acquainted with some representative *original* contributions to the Economic History of Europe. Hence the present collection.

In making the selection it appeared preferable to present a small number of self-contained, if somewhat lengthy, chapters and a few substantial, well-rounded studies, rather than to put together a mosaic of numerous brief articles and fragmentary passages from books. The latter procedure, it is true, would have permitted a greater diversity of topics and viewpoints. But the advantage would have been bought too dearly. If plunder we must, let us at least not be too unfair to our victims; their work, if it cannot be shown in its fullness, yet deserves to be represented by selections sufficiently extensive to convey an idea of its structure and significance.

Acting upon this principle at once created additional difficulties. For, within the space at our disposal, the number of contributions had to be severely limited. Yet it was intended to have these selected readings cover, as far as possible, the whole course of European Economic History from

early medieval times down to the eighteenth century. Moreover, within this chronological framework the main subjects of Economic History—agrarian conditions, industrial organization and technology, commerce and finance, and the influence of public power on economic life—should be broadly represented. Nor should the geographic boundaries be drawn too narrowly. While the main emphasis was to be placed on English economic life, insular exclusiveness was to be avoided, especially with regard to the earlier period, during which England remained, as Professor Tawney once put it, “on the outer edge of economic civilization”. What we had to aim at was a “reconciliation of differing optima”—an eminently economic problem. However, in the absence of well-defined value premises, any such process of reconciliation cannot but be arbitrary. Chance, too, played its part: not all publishers that were approached saw their way to granting permission to reprint. Some eligible material is not available in an English translation.

For all these reasons the present selection remains wide open to criticism. The editor is intensely aware of curious gaps and almost unforgivable omissions. He knows that no space has been accorded to studies of medieval commerce and industry. He is conscious of having failed to include treatments of such important topics as population, banking (though George Unwin's essay on the Merchant Adventurers has something on currency transactions and bills of exchange), transportation, and colonies—to mention only a few glaring omissions. Yet while he is willing to submit to any criticism on the score of faulty or unbalanced selection of subjects, he is prepared vigorously to defend his choice of authors: not that it would have been impossible to assemble an equally imposing collection from the work of other scholars, but the ones selected do clearly belong in the class of historians who have left an indelible imprint on our knowledge and interpretation of the past.

A word of apology must be offered, however, for the Introduction. Its purpose is simply didactic. Might not students be expected to appreciate better the importance of historical detail, once they have been shown some dim outlines of the whole picture?

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I owe a heavy debt of gratitude to many of my friends and colleagues who have commented on, criticized, improved, and generally encouraged my efforts. Professors V. W. Bladen, S. D. Clark, H. A. Innis, R. F. Legget and D. C. MacGregor have been kind enough to read the whole or part of my Introduction in manuscript. Mr. and Mrs. H. B. Burnham helped me to smooth out a few linguistic oddities in the Introduction, and read some of the proofs. My wife and eldest son also faithfully shared in the tedious work of proof-reading. Last but not least I wish to thank Mr. Gordon Burns, Manager of the University of Toronto Press, and his editorial staff, for their helpful collaboration.

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THE UNIVERSITY OF TORONTO

June, 1946

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Introduction

Introduction

I. *The theme of Economic History*

*Cursed is the ground for thy sake; in sorrow shalt thou eat
of it all the days of thy life;
Thorns also and thistles shall it bring forth to thee; and
thou shalt eat the herb of the field;
In the sweat of thy face shalt thou eat bread, till thou
return unto the ground.—Genesis 3: 17-19.*

In his preface to the first edition of *Wealth* Edwin Cannan assigned to economics the task of determining “why all of us, taken together, are as well off—or as ill off, if that way of putting it be preferred—as we are.”¹ The phrasing of this passage is significant. The late-Victorian author, while conceding the sceptic his point of view, himself seems to take a mildly optimistic view of the situation (Cannan’s preface was written in January, 1914.) But let us add at once that most writers in all ages, from Moses down to Malthus and Marx, did prefer “that way of putting it”. While offering different explanations of this deplorable state of affairs—God’s seemingly incongruous punishment of idle curiosity, the pressure of population on food, or private ownership of the means of production—they were all agreed on the fundamental fact that mankind was very badly off indeed. More recently this same view has been expressed; in words less poetic and emotional than those ascribed to Jehovah, by Gustav Cassel. “The first condition” of all economic activity “is the fact that there exists a definite limit to the satisfaction of wants as a whole. . . . Every economic system . . . labours under the condition of a scarcity of means for the satisfaction of wants ”²

What appeared to the author of Genesis a divine curse, the necessity of relentless efforts to wrest from a hostile, or at best niggardly, nature the scanty means of livelihood: this is the theme of Economic History. It is the story of an everlasting struggle against want and scarcity. “In the sweat of his brow”, that is to say with limited means of production, man has had to provide first of all for the satisfaction of his basic wants: for food and fuel, for clothing and shelter. Next, or rather concurrently, provision has had to be made for other wants, only a little less fundamental, the desire for distinction and ornament, for worship and play. The phases of this collective struggle, first for mere survival, and then for a minimum of comfort, fill the pages of Economic History.

This struggle has been long, and for thousands of years man must

¹ Edwin Cannan, *Wealth* (3rd ed., London, 1930), p. v.

² Gustav Cassel, *The Theory of Social Economy* (New York, 1932), p. 5

indeed have despaired of lasting success—if ever he had leisure enough to speculate on the future destinies of the human race. *Individual* success, to be sure, was always within the bounds of possibility; and the question of how power and property were distributed as well as the related problem of how the social income and the collective effort were shared, forms part of Economic History, too. A ploughman might chance upon some hidden treasure and henceforth be able to claim a larger share of the social output. The shepherd boy sent out to seek his father's asses might return the anointed of the Lord, and, after the manner of kings, take his people's sons and daughters to reap his harvest and be his cooks and bakers. Priests, in the name of their god, might tithe the people, and grow fat on the fruits of the land. Money-lenders, by dint of compound interest, might possess themselves of the fields and vineyards of their neighbours. Warlike tribes of mountaineers might descend upon the fertile plains, and exact tribute from their vanquished foes. But the fact that from time to time individuals and particular groups did succeed in amassing riches beyond the dreams of avarice, and could afford to consume on a lavish scale, does not, of course, invalidate the "Principle of Scarcity" to which mankind, collectively, remained subject. Indeed, a highly unequal distribution served to accentuate the poverty of the disinherited.

Through countless generations the rate of growth of man's collective wealth must have been almost imperceptible. For, in order to produce more and better goods, man would have needed more and better means of production in the widest sense of the word: more tools and utensils, more and stronger draught animals, more land, and, be it added, more knowledge, higher skill, and greater physical strength. The better and the larger his equipment, the more effectively man can work, and the greater the quantity and the higher the quality of the goods he can produce. The harder his hammer, the sharper his axe, the larger his herd of oxen, the greater the productive results man can achieve.

But equipment does not grow on trees. Means of production have to be produced themselves before they can serve their purpose. Land has to be cleared or drained, domestic animals have to be bred and fed, tools have to be shaped and sharpened, knowledge, skill, and muscular strength have to be acquired. These means of production (always including knowledge) can be created, however, only at a sacrifice of time and energy. Yet time and energy, and what little initial equipment there existed, were needed for the satisfaction of urgent and immediate wants. Since equipment was scanty to start with, man's productive capacity was small, and almost all of it had to be devoted to the task of producing goods for current consumption. A vicious circle: the poverty of man was his undoing. Improvement of land and accumulation of equipment and durable consumers' goods, remained very slow. Land which is both naturally fertile and accessible is not available to an unlimited extent in any case. But even other forms of capital equipment such as sickles and

scythes, hammers and hoes, spindles and looms, pots and pans, horses and oxen remained deplorably scarce.

What slight advances may have been secured in the course of time were only too often offset by serious reverses. Capital equipment, laboriously accumulated over generations, was often wiped out in one night. Houses and water-mills, tools and stores, orchards and vineyards were destroyed, time and again, in wars and invasions. Fires, floods, earthquakes, and landslides took their toll, and contagious diseases decimated the flocks. More serious even than material destruction was temporary retrogression in the realm of knowledge. There were times when the technical knowledge of former generations was half forgotten, and some of it even lost completely, to be rediscovered only slowly in the course of centuries.

And yet, looking over Economic History as a whole, we seem justified in saying that mankind or at any rate important sections of the human race have been progressively successful in their struggle against scarcity, successful that is *on the supply side*. We have learnt to produce infinitely more, and in many cases better, goods than our predecessors in times past; and, what is of greater importance still, we are not only producing more *in the aggregate*, but also more *per capita*—and this despite vastly greater numbers of consumers. Moreover, it would seem (though of this we cannot be too sure) that all these huge quantities of useful things are being produced with less individual effort. Modern man is making things, we like to persuade ourselves, at a smaller real cost. Not only has the aggregate and per capita supply of goods and services increased: so has leisure.³

³ While this is not the place for a discussion of epistemological subtleties, a brief reference might be made to the difficulties inherent in the use of value concepts in Economic History. All we can measure and compare are physical and chemical qualities of goods, such as tensile strength, hardness, caloric content, acidity, etc. (Some would insist that artistic qualities, too, though not measurable and certainly less easily demonstrable than physical ones, are timeless, and admit of some sort of comparison.) What we cannot compare, however, are the satisfactions derived from different goods by different individuals, still less satisfactions experienced by different individuals at different times. Thus, while it is legitimate to speak of a modern steel blade as a "better" razor than the bronze shaving knife of Roman times—as long as we mean by this assertion nothing more than that the steel blade is harder, more durable, etc.—we can only guess (although in this particular case with reasonable certainty) that the discomfort suffered by a Roman during his morning shave was somewhat greater than ours. But then, this Roman may have derived a keen aesthetic pleasure from handling a beautifully ornamented tool, a satisfaction which may have outweighed any slight pain resulting from scratches.

As soon as we try to contrast exertions we encounter an epistemological difficulty very similar to that discussed above. Effort, in economics, is not a measurable quantity as in physics, where it can be expressed in ergs. We cannot, therefore, compare efforts and sacrifices of different persons at different times any more than we can satisfactions. The exertions of all the different kinds of labour that were directly or indirectly involved in preparing a dish of boar's meat in the twelfth century—the hunting (an activity which, after all, may have been more of a pleasure than a sacrifice), the cooking, the making of the lance used in killing the boar, the cutting of the firewood, etc.—are hopelessly incommensurable with the sum total of "disutility" needed to produce a meal nowadays.

At the risk of seeming pedantic we should like to repeat this warning. The aggregate leisure enjoyed by a medieval serf in the course of a year, despite the great number of holidays in the Middle Ages, was probably much less than the free time at the disposal of a modern farmer. Yet while it is theoretically possible to reckon up the total number of hours of idleness in both cases (needless to say our information is too inadequate actually to attempt any such count), there is no way of comparing the enjoyment derived from their leisure time by the bondsman and the farmer respectively.

But while supplies have been growing at an accelerating rate, especially during the last two centuries, rising expectations, wants, and desires seem to have kept pace with, or even outrun, improved means of satisfying them. *L'appétit vient en mangeant.* Modern man expects a great deal more of life than his ancestors: an ampler and more diversified diet, a larger (and cleaner!) wardrobe, more spacious living quarters, softer beds and easier chairs, better lighting and less cumbrous heating, better medical care, faster communications, more highly sophisticated amusement. Ever-new appetites are being created by modern advertising and by the example set by the man next door. What Thorstein Veblen has called "conspicuous consumption", the desire, that is, to keep up with, and if possible outdo, your neighbour is a fundamental factor in economic life; and so is the desire for change and variety.

Thus, while specific wants are capable of complete satisfaction, human desires taken together seem to be insatiable. Moreover, until recently mankind seems to have responded to any easing of its economic burden with an increase in numbers. In the eighteenth and nineteenth centuries a fairly high proportion of man's growing capacity to produce had to be devoted to the task of providing for the additional numbers. And while it is true that the Western world has made some progress toward the conquest of dire want, it should be remembered that the pressure of population on food is still very real in the teeming regions of the Far East. We therefore may well wonder whether the ancient curse of Genesis has actually been lifted from humanity.

II. *The spectre of famine*

And I beheld, and lo a black horse; and he that sat on him had a pair of balances in his hand.

And I heard a voice in the midst of the four beasts say, A measure of wheat for a penny, and three measures of barley for a penny.—Revelation 6· 5-6.

Late-medieval writers and poets have left us many a vivid description of gorgeous banquets, contemporary painters and illuminators have depicted those feasts in all their splendour, and books of instruction in medieval cookery tell us in great detail how those sumptuous dishes were prepared.¹ However, these accounts of ostentatious consumption tend to give a one-sided idea of life in the Middle Ages. Of course, royalty and nobility, bishops and abbots, and wealthy merchants must have fared

¹ See William Edward Mead, *The English Medieval Feast* (London, 1931).

pretty well at all times (though even the higher classes of medieval society do not always seem to have escaped the necessity of covering up the taste of slightly putrid meat and fish by a lavish use of spices).¹ The lower ranks, from time to time, had their revels,² too. Artisans had their guild banquets, peasants their funeral meals and wedding feasts (Peter Breughel has painted one for us.) On such and similar occasions people would gorge and gulp heartily,² as if to fortify themselves against the lean weeks and months ahead. For, ordinarily, the diet of the common man was monotonous and scanty, even in years of relative plenty.

Any such general statement would, of course, require many qualifications with regard to both time and place. Social and economic conditions kept changing throughout the Middle Ages. For instance, the share which the West and Central European villein was able to retain for himself of the gross total of his production was probably substantially higher in the twelfth and thirteenth centuries than it had been in the tenth; and so, we have reasons to believe, was that gross total itself. Nor was there any uniformity of social and economic conditions from region to region. In the fifteenth century the conditions of material life of the rural classes seem to have deteriorated in many parts of the European continent; yet prosperity, we are told, prevailed in England, Flanders, and the Rhineland.³

But when all is said there still remains enough evidence, if only of an illustrative rather than quantitative nature, to bear out our contention that the daily bread of our medieval forefathers (assuming that we are descended from lowly stock) was at most times less plentiful and less diversified than ours. "The villein", says a French moralist of the early twelfth century, "never drinks the fruit of his vine nor tastes a scrap of good food; only too happy is he if he can keep his black bread and some of his butter and cheese."

*If he have fat goose or hen,
Cake of white flour in his bin,
'Tis his lord who all must win.⁴*

The English labourer is reported to have subsisted on a similar diet as late as the fourteenth century. "Labourers of old", John Gower, a disgruntled critic of working-class insolence, tells us, about 1375, "were

² A thirteenth-century author, Wernher der Gartenare, in his social satire *Meier Helm-brecht* (ed. by Charles E. Gough, Oxford, 1942) describes a breakfast prepared by a prosperous Austrian peasant for his good-for-nothing son on his return home. The prodigal was treated to "pickled cabbage, finely cut, with good meat besides, fat and lean, in both kinds, rich and mellow cheese, a fat goose as big as a turkey, fried on a spit, and chicken fried and boiled" (vss. 867-90). One must, of course, make some allowance for satirical exaggeration.

³ P. Boissonnade, *Life and Work in Medieval Europe* (New York, 1927), pp. 330f. In England, great differences in the standard of living existed even from county to county. See James E. Thorold Rogers, *Six Centuries of Work and Wages* (10th ed.; London, 1909), pp. 171 f. and *passim*.

⁴ Boissonnade, *Life and Work in Medieval Europe*, pp. 145 f.

not wont to eat of wheaten bread;⁵ their meat was of beans and coarser corn, and their drink of water alone. Cheese and milk were a feast to them and rarely ate they of other dainties."⁶ Now our witness, who wishes to contrast old-time frugality with modern extravagance, implies that labourers in his own day were much better off than folk of this sort in the past; in his endeavour to drive home his point he may even have been guilty of an overstatement. But Chaucer's widow, "poor, somewhat advanced in age", yet by no means destitute (she had three cows, three large sows, a sheep, not to forget the hero of the tale, the cock Chanticleer, with his seven hens) could not afford a much richer diet either.

*Of sharp sauce, why she needed no great deal,
For dainty morsel never passed her throat;
Her diet well accorded with her coat.
Repletion never made this woman sick,
A temperate diet was her whole physic.*

.
*And no wine drank she, either white or red;
Her board was mostly garnished, white and black,
With milk and brown bread, wherof she'd no lack,
Broiled bacon and sometimes an egg or two.⁷*

As long as people, like Chaucer's widow, had no lack of milk and cheese and brown bread, even though they must forego tastier food and drink, they were not really wretched. They did not expect much more of life. Only in their fairy-tales would they permit themselves extravagant fancies of gluttony: as, for instance, in the story of the *Schlaraffenland* or *pays de cocagne*, a country where people were able to gormandize to their hearts' content, idly waiting for roast doves to descend into their open mouths, or leisurely eating an adit into a mountain of plum pudding—grotesque wish-dreams of hungry and overworked peasants and miners.⁸ But if ever they were tempted to draw an invidious comparison between their table and that of their betters, the poor would be sternly reminded

⁵ Sir William Ashley, *The Bread of our Forefathers* (Oxford, 1928), has shown conclusively that "a complete transition to a wheat bread diet on the part of the mass of the [English] people was only effected during the eighteenth century" (p. 132). Throughout the Middle Ages, rye, "maslin" or "mancorn" (a mixture of wheat and rye), barley, oats, buckwheat (in France), and other coarse grains remained very important elements in the food of the common people over most parts of Europe. Only in the Mediterranean regions did wheat play the predominant role.

⁶ G. G. Coulton, *Social Life in Britain from the Conquest to the Reformation* (Cambridge, 1938), p. 353.

⁷ Geoffrey Chaucer, *Canterbury Tales* (rendered into modern English by T. U. Nicolson, New York, 1934), p. 265.

⁸ The motif of a land of effortless over-indulgence can be traced back to the Attic comedy of the fifth century B.C. In the Middle Ages, variants of the story of *Cucania* seem to have gained wide currency. See Erich Schmidt, *Charakteristiken* (Berlin, 1901), Vol II, pp. 51 ff. Peter Breughel's obscene painting of the *Schlaraffenland* presupposes general familiarity with this theme in the sixteenth century. This writer understands that the story, well known to medieval Englishmen, is no longer current among their descendants. Are they too well fed or too sober-minded to indulge in such repulsive fantasies?

by the Church that man must be content with his station in life, and that envy and gluttony were two of the seven deadly sins.

Unfortunately, medieval man could never be sure of even the modicum of food described by Chaucer and other witnesses. Unlike modern man, who has become all but independent of the seasons, medieval peasants and townsfolk alike used to suffer acutely from winter scarcity. They seldom tasted any but salt meat after Martinmas (November 11), and the supply of milk nearly dried up before the cows could again be driven to the pasture. For reasons to be explained later, only a very small number of cattle could be kept through the winter, fed almost entirely on straw and dry leaves. Milk production, therefore, never high even in the summer, almost ceased during the cold season. It has been estimated that four-fifths of the annual yield of milk was in the months from April to September, when the cows were on pasture.⁹

Even more disastrous than seasonal irregularity of supplies was the frequent recurrence of dearth and famine caused by crop failures. "In all ages of the world except the present, want of food has caused wholesale destruction of the people. Even in London in the seventeenth and eighteenth centuries the mortality was eight per cent greater in years of dear corn than in years of cheap corn."¹⁰ In the early Middle Ages the apocalyptic horseman was a familiar spectre in all European lands. Walford's shocking chronology of famines,¹¹ alas! is far from complete. Professor Boissonnade has counted no less than sixty famine years in France between 970 and 1100!¹² The following centuries brought some improvement; but there still occurred ten major famines in France during the thirteenth century.¹³

There is no reason to suppose that Nature in the Middle Ages showed any greater hostility towards mankind than she does now; it is rather that man's defences were weaker then. His productivity was so low that he found it very difficult to accumulate a sufficient stock of provisions as a reserve against lean years. Even if he had had the foresight of Joseph, he never enjoyed seven plenteous years in which he could have "gathered corn as the sand of the sea". This is not to deny that in years of moderately good yields many a manor (the demesne and the land of the tenants taken together) produced slightly more than was consumed by the lord's *familia* and the peasants. There always existed an urban population, however small in the early Middle Ages, whose food requirements had to be met, at least partially,¹⁴ by manorial surplus production. But any

⁹ Vladimir G. Simkhovitch, "Hay and History", *Political Science Quarterly*, Vol. XXVIII (1913), p. 394.

¹⁰ Alfred Marshall, *Principles of Economics* (8th ed., London, 1927), p. 196.

¹¹ Cornelius Walford, *The Famines of the World Past and Present* (London, 1879), pp. 4 ff.

¹² Boissonnade, *Life and Work in Medieval Europe*, p. 146.

¹³ *Ibid.*, p. 260.

¹⁴ Many inhabitants of the smaller medieval towns were not "urban consumers" in the modern sense of the word. They were *Ackerbürger* (i.e., "ploughing burghers"), growing part of their provisions themselves on land outside the city walls.

disposable surplus, and whatever permanent stocks of victuals the manorial barn and cellar might contain,¹⁵ were the result of severe abstinence enforced upon the peasants under a system of grossly unequal distribution of income. If abbots and cathedral chapters could be relied upon to make some provisions against harvest failures, their tenants, after paying tithes and rents, were hardly in a position to do so. The average peasant had barely enough produce left to keep himself, his family, and his livestock from one harvest to the next.

This view differs somewhat from opinions expressed by Thorold Rogers, whose vast knowledge of living conditions in medieval England lends weight to his judgment. Speaking of the English husbandman of the thirteenth century, Thorold Rogers has this to say: "His wants were few, and most of them were satisfied on the spot, and it was quite possible, by thrift and painstaking, not only to satisfy the claims of his lord and the charges of the tax collectors, but to make a store, with which to gratify his paternal ambition or to enlarge his holding."¹⁶ Evidence of what, if contrasted with conditions in earlier centuries, must be termed rural prosperity in twelfth- and (already waning) thirteenth-century England, is, indeed, not lacking. We hear of well-to-do peasants who rented demesne lots from the lord, and even of the leasing of whole manors to the tenants collectively. Commutation of labour services into money payments, too, though sometimes imposed upon the villeins against their will,¹⁷ may be cited in evidence of a widening margin. Yet a tentative quantification, beset though it is with many and very great uncertainties arising from the inadequacy of our data, seems to warn us against too optimistic inferences.

It is possible to form a rough estimate of the average amount of wheat produced and consumed annually by what may be regarded as a fairly typical English husbandman of the later Middle Ages, namely, a customary tenant holding a virgate, i.e. thirty acres of arable land with its appurtenances. Under the prevailing three-course rotation one third of that ploughland would be fallowed every year, another third would be sown to barley or oats (the drink or fodder crops), and the remaining ten acres would produce the food crop (wheat and/or rye, or perhaps some mixed grain). So as not to complicate our calculation unduly we shall assume (not quite realistically¹⁸) that this last portion of the arable was

¹⁵ Contemporary descriptions of huge barns chock-full of grain seem to suggest that manorial grain holdings, especially on well-managed ecclesiastical estates, were at times fairly substantial in twelfth- and thirteenth-century England. See Ashley, *The Bread of our Forefathers*, pp. 124 ff., for twelfth-century evidence. See also A. E. Bland, P. A. Brown, and R. H. Tawney, *English Economic History. Select Documents* (London, 1914), p. 80, for a similar description of stock received by the lessees of a monastic manor in 1279. It should be observed, however, that this lease commenced at Michaelmas, that is to say at a time when stocks would be at a maximum.

¹⁶ Thorold Rogers, *Six Centuries of Work and Wages*, p. 169.

¹⁷ Complaints against a reeve in 1278 included the charge that he had "taken gifts from the rich tenants that they should not become tenants at a money rent", and that he had "put the poor tenants at a money rent". Bland, Brown, and Tawney, *English Economic History*, p. 85.

¹⁸ See note 5 above.

entirely given over to wheat. The average English wheat yield per acre in the thirteenth, fourteenth, and the first half of the fifteenth centuries has been estimated by Sir William Beveridge to have been in the neighbourhood of 7.5 bushels of 60 pounds.¹⁹ This figure has been criticized, with some justification, it appears, as slightly too low. ‘Perhaps 10 bushels would not be too high, but a conservative guess would be 8 to 9 bushels.’²⁰ But since Sir William’s average has been derived from statistics of demesnial yields, it is perhaps safe (even if it be too low for these) to use it for a computation of returns from land in villeinage, which may be presumed to have been somewhat less productive than the well-managed estates of great ecclesiastics. Basing our calculation then on that long-term average of 7.5 bushels, we find the gross wheat product of a virgate to have been on an average something like 75 bushels per year. But this gross total was, of course, not all available for consumption by the tenant and his family. Deduction must first of all be made for seed, say 2 bushels per acre,²¹ making 20 bushels all in all. Our virgater next, or rather before he even carted his harvest into the barn, had to discharge his obligation towards the Church, which claimed the tithe, i.e. every tenth sheaf on the field. This would represent a charge of 7.5 bushels on that hypothetical gross return.²² What the various rents and dues paid in grain to the lord (*foddercorn, gavelseed, gather-corn, corn-bote, mill dues, etc.*)²³ amounted to is almost impossible to estimate, since these imposts varied from manor to manor. But since the greater part of them was paid in grains other than wheat we need not trouble much about them. It would be of greater importance if we could form some idea of the amount of wheat our peasant found it necessary to sell in order to raise part of the cash needed, not only for the purchase of such necessities as he could not produce himself (e.g. salt), but also for the payment of fines, money rents, taxes, and the equivalent of such labour services as had been commuted into monetary dues. On a wild guess we shall assume

¹⁹ W. H. Beveridge, ‘The Yield and Price of Corn in the Middle Ages’, *Economic History A Supplement to the Economic Journal*, Vol. I (1927), pp. 155 ff. Acreage yields, undoubtedly, were much higher in other European regions, for instance in Lombardy. But in those favoured districts the density of population was much greater, too.

²⁰ M. K. Bennett, ‘British Wheat Yield per Acre for Seven Centuries’, *Economic History*, Vol. III (1935), No. 10, pp. 12 ff. It should be noted, however, that a yield of 7.5 bushels per acre does not compare unfavourably with the average harvest from Italian soil in ancient times. According to Columella, a Roman agronomist writing about 65 A.D., the average return for Italy was fourfold. This, with an average seeding of $2\frac{1}{4}$ bushels per acre, represents a harvest of about 9 bushels per acre. See Courtenay Edward Stevens, ‘Agriculture and Rural Life in the Later Roman Empire’, *The Cambridge Economic History*, (Cambridge, 1941) Vol. I, p. 100.

²¹ This figure is based on Sir William Beveridge’s mean of 2.48 measured bushels for the period from 1200 to 1450. Following M. K. Bennett’s procedure, a reduction of 20 per cent has been made to arrive at the modern bushel of 60 pounds.

²² It might be objected that, since our basic figure of 7.5 bushels per acre is derived from manorial accounts into which the tithe grain did not normally enter, we are not entitled to make another deduction on that account. But Mr. Lennard, who first drew attention to this statistical problem (see R. Lennard, ‘Statistics of Corn Yields in Medieval England’, *Economic History*, Vol. III (1936), No. 11, pp. 173 ff.), has also shown that in many cases the recorded demesne crop and the actual crop were identical after all.

²³ See Lennard, ‘Statistics of Corn Yields in Medieval England II’, *Economic History*, Vol. III (1937), No. 12, pp. 326 ff.

that a contribution towards all these last-named outlays and obligations required the sale of another 7.5 bushels of wheat.²⁴ This would leave no more than 40 bushels available for annual consumption by the family of the tenant. Assuming that his household consisted of five persons,²⁵ we arrive at a per capita supply of only 8 bushels per year.

This figure corresponds pretty closely to French per capita consumption in modern times,²⁶ and does not, therefore, strike one as unduly low at first glance. Moreover, it is safe to assume that part of the spring crop (for instance barley), which was grown on the second field, was normally used to supplement the peasant's supply of bread and flour. But this picture appears in much darker hues as soon as we realize that flour products represented a much higher proportion of the common man's diet in the past than they do now, even in a country of high per capita consumption of wheat such as France. We must remember that two important sources of carbo-hydrates in the modern diet, potatoes and sugar, were lacking in medieval cookery. When we are told that in the early modern period "at the standards recognized *in famine time* eight [measured?] bushels of wheat were allowed per person per year"²⁷ we begin better to appreciate the true significance of an average per capita supply of 8 bushels. If our tentative estimate is anywhere near the mark, our hypothetical late-medieval English virgater must have subsisted on a very slim margin indeed.²⁸ One hesitates to visualize the plight of his poorer brethren, the half-virgaters, the holders of "ferdels" (i.e. quarters of a yardland), and the cottars. The two last-named groups of course always depended on wage earnings for a living. The former, holders of fif-

²⁴ The sale of $7\frac{1}{2}$ bushels of wheat, equalling 9 36 "measured" bushels (see note 21), would, on the basis of Sir William Beveridge's average price, 1200 to 1450 ("Yield and Price of Corn", p. 163), yield a monetary return of 7.08 shillings. Needless to say, a late-medieval English peasant ordinarily had other and more important cash crops than wheat, wool being the outstanding item. But then, seven shillings was not a very great sum of money even in those days, and all we assume is that it was necessary for the tenant to sell *some* wheat to help discharge the total annual cash outlay, which was almost certainly much higher than seven shillings.

²⁵ A frequently used multiple. See A. P. Usher, *An Introduction to the Industrial History of England* (Boston, 1920), p. 92.

²⁶ French per capita human consumption of wheat was (in five-year averages):

1885 - 1889	7 66 bu.
1899 - 1904	7 74 bu.
1909 - 1914	8 07 bu
1922 - 1927	7 10 bu.
1932 - 1936	6 90 bu.

(I owe the first two of these figures to my former colleague Mr. L. A. Skeoch, the others were taken from Paul de Hevessy, *World Wheat Planning and Economic Planning in General* (London, 1940), Appendix 22. French per capita wheat consumption has been selected for comparison, because it virtually represents the entire per capita cereal consumption, very little coarse grain being used for human food in France.)

²⁷ Witt Bowden, Michael Karpovich, and Abbot Payson Usher, *An Economic History of Europe since 1700* (New York, 1937), p. 5

²⁸ H. S. Bennett, *Life on the English Manor* (Cambridge, 1937), pp. 85 ff., has made a similar calculation of the peasant's gain, based, however, not only on the production of wheat but also on the returns from oat and barley fields. His general conclusion does not materially differ from ours. For the majority of medieval tillers life was "a struggle in which they were bound to lose unless the seasons were propitious to them" (p. 89).

teen acres of arable, may not have found it possible to spare much time for wage work, as long as they were obliged to perform heavy labour services on the demesne. Furthermore, we may take it for granted that, before commutation of those services into money payments had taken place, the average yield of wheat per acre of tenant land was appreciably lower than Sir William Beveridge's late-medieval figure of 7.5 bushels. As long as the villein was liable to work up to three days a week on the lord's land his own soil cannot have yielded much. And finally, it must be kept in mind that the three-course rotation marked the high tide in medieval husbandry. In earlier centuries, under a two-course system, a virgater may have had only fifteen, instead of twenty acres of ploughland available each year for the growing of both fodder and food grain. One almost fails to understand how a small tenant in the tenth or eleventh century was able to eke out a living at all. He certainly could not have done so had it not been for the common wood and pasture, still seemingly inexhaustible in these early days, which, during the summer, provided abundant fodder for hogs and sheep and cattle. Livestock production, in more than one respect, was the mainstay of early European farming.

This brief inquiry into medieval net returns from peasant holdings will have served its purpose if it helps us to understand the frequent recurrence of famine: As stated above, the medieval peasant could not normally be expected to lay up provisions. He thus was at the mercy of the elements and his fellow-creatures. Whenever his fields were struck by frost or flood,²⁹ whenever locusts descended upon his meadows, whenever he was prevented from ploughing and sowing and reaping by war or brigandage, whenever his livestock was carried off by the murrain, the medieval tiller of the soil was reduced to immediate and dire poverty. Even local crop failures, which might have been relieved by shipments from neighbouring regions, or mitigated by doles from the lord's storehouse, often proved major disasters. For bulky goods such as grain could not be moved easily over long distances, even had there existed sizable excess supplies elsewhere. Means of transportation were scanty and primitive, roads, except for the surviving Roman highways, were bad, and river tolls were many.

It must be borne in mind, too, that people who had gone hungry through one year were not very efficient workers in the next season. Even if they were not weakened, as was often enough the case, by epidemics following in the wake of starvation, their productivity must have been seriously impaired by malnutrition; not to speak of the possibility that the famished peasant might have eaten up his stock of seed

²⁹ Drought, always a major climatic hazard in the Mediterranean countries, seems to have been less frequent in north-western Europe during the earlier Middle Ages. Our sources speak more often of excessive rainfall and floods. Before the age of the great clearings (see below, p. 17ff) the heavy forest cover of northern and central Europe may have been the cause of higher precipitation. See Georg Steinhausen, *Geschichte der Deutschen Kultur* (2nd ed.; Leipzig, 1913), Vol. I, p. 14.

grain in despair. We therefore often hear of prolonged famines, lasting sometimes for years³⁰

It is against this background of what would appear today insufferable poverty that we want to appraise the magnitude of Western man's achievement over the last one thousand years of economic history. We shall attempt to sketch the two most important processes by which the relative plenty of modern times has been made possible: the extension of the cultivated area, and improvements in agrarian techniques.

III. Toward the conquest of hunger: Clearing, colonization, and improvement

If thou be a great people, then get thee up to the wood country, and cut down for thyself there.—Joshua 17:15

The Middle Ages to the romantic suggest pictures of tournaments and knights-errant; to the student of literature they are the times of troubadour poetry and the great epics, to the art historian, the heroic age of cathedral-building, the political historian thinks of the medieval struggle between the papacy and secular power, of the Crusades, and the Hundred Years' War, to the constitutional lawyer the chief interest of that period lies in the flowering of feudalism and the birth of parliamentary institutions. All these and other important aspects of medieval civilization have their economic significance, too, but to the student of Economic History the Middle Ages are first and foremost the age of the great clearings, of the first attack, on a continental scale, upon the vast primeval forests and marshes of northern Europe. France, Germany, Britain, and the Low Countries as we know them today, countries of arable fields, of meadows and vineyards, and of forests that have lost their terror, are the work of medieval man. In Italy, too, where large-scale clearings had already started in early antiquity, much remained to be done during the Middle Ages in the way of assarting and draining.¹

In the North, the virgin forests and swamps remained almost untouched until the end of the great migrations, and even later. It is true,

³⁰ A terrible famine, which struck the Low Countries, lasted three years, from 1144 to 1147, and may have been a contributing cause of the great emigration which took place from Flanders in the twelfth century. See James Westfall Thompson, *Feudal Germany* (Chicago, 1928), p. 549.

¹ The following account is largely based on Richard Koebner, "The Settlement and Colonization of Europe", *The Cambridge Economic History* Vol. I, chap. I.

some conquests of woodland were made in Gaul and Britain, and to some extent even in Upper Germany east of the Rhine in early Imperial times. But it would seem that Roman clearings in those frontier provinces, while they resulted in substantial additions to the arable land, were always on a strictly limited scale. Moreover, they began to cease before the third and fourth centuries. During the last phases of antiquity, settlement, far from being extended into previously unoccupied regions, actually receded in more than one province of the Roman Empire. In North Africa no less than 1,750,000 acres of cultivable land had become derelict by A.D. 442, in central Italy 35,000 acres are reported as lost to cultivation in A.D. 395.² These Mediterranean areas, whose productivity depended largely on the maintenance of irrigation works, were particularly vulnerable; but some land was abandoned in Gaul and Britain, too.³ The Roman State, in an attempt to stay this process of dereliction, which caused the loss of taxable units, resorted to such desperate means as the settling of barbarians on vacant land, and compulsory leases of tumbled-down estates. The creation of *coloni adscripti*, discussed by the late Professor Marc Bloch in his essay, "The Rise of Dependent Cultivation,"⁴ belongs in the same category: the free tenant was tied to the land in order to secure its continued cultivation.

While late-Roman society was thus grappling with the problem of maintaining agriculture in the face of fiscal distress and declining population, very different troubles were developing beyond the *limes*. The time when Tacitus was able to reassure his Roman readers that the Germans had ploughland to spare ("superest ager") had long since passed. Multiplying freely, the barbarians began to feel the growing pressure of population on their resources of land. These were strictly limited, for their early settlements were confined to such stretches of land, none too frequent in central Europe, as were both naturally free from forest cover, and dry. The Germans were not yet able to assail the vast swamps and virgin forests that surrounded these islands of open country. Nor was this inability simply a question of lack of equipment, and primitive technique; the Germans, as Professor Koebner has pointed out, seem to have had strong inhibitions against violating the dark and silent wilderness of the ancient forests, which inspired them with profound religious awe. Unwilling to extend their ploughland and pasture by clearings, and yet unable to wring greater returns from their available land, the Germans sought to acquire fresh soil from others. The result of that craving for more open land, which under the

² See C. E. Stevens, "Agriculture in the Later Roman Empire", pp. 101, 112.

³ *Ibid.*, p. 103. Aerial photography shows that part of the English fenland must have been under cultivation in Roman times. It is not possible, however, to decide whether the Romans practised artificial drainage (in which case the flooding may have been due to the waterworks' falling into disrepair), or whether the deterioration was the result of natural causes (land subsidence) in post-Roman times. See H. C. Darby, *The Medieval Fenland* (Cambridge, 1940), pp. 4 ff.

⁴ See below, pp. 51 ff.

circumstances could be satisfied only by conquest, was the *Völkerwanderung*, the great migrations of the tribes. For centuries intermittent waves of barbarians thus began to press against, and spill over, the borders of the Empire.

These centuries of social and political chaos were of course anything but favourable for clearing and colonization. Even though the barbarian inroads may not always have been accompanied by wholesale devastation, it was inevitable that the general insecurity should have caused a shrinkage rather than an extension of the settled land. Indeed, there is evidence of long-neglected soil in Gaul, Britain, and elsewhere having reverted to bush and brushwood, to be partly reclaimed only in Merovingian and Carolingian times.

After the middle of the sixth century these violent movements of races began to subside, and with the return of political stability and ethnic consolidation the Germans had to make the best of whatever land they possessed at the time. Instructed by the conquered and assisted by the Church, the new masters and their Roman dependents soon began to bestir themselves restoring abandoned land to productivity. By the time of Charlemagne this relatively easy task of clearing waste land under second growth began to shade off into an attack upon the primeval forests. The military conquests of the great Charles in Saxony had permanently secured the eastern frontier of the Frankish realm, and thus encouraged free peasants and great lords alike to start widespread clearings in the wooded hills on both sides of the Rhine. The Emperor's victorious campaigns along the Danube had opened up vast new territories for organized colonization, undertaken chiefly by Bavarian monasteries and bishoprics. The establishment of the Spanish Mark called for frontier settlements north and south of the Pyrenees. In eighth- and ninth-century England, too, the woods resounded with the clangour of axes wielded by sturdy Saxon peasants who sought to carve out new or enlarged holdings for themselves and their growing families.

However, the time of uninterrupted progress in European settlement had not yet arrived. The ninth and tenth centuries experienced new and fearful upheavals. Norsemen and Danes raided and conquered territory all along the shores of the North Sea, the Channel, and the Irish Sea. Saracens infested the coasts and islands of the western Mediterranean. Fierce Magyar horsemen, issuing forth from the Hungarian steppe, repeatedly swept across central Europe, as far as Saxony, Tuscany, and southern France. In the North-East, where there was continuous border warfare with the Wends along the Elbe and Saale rivers, a savage rebellion of the Baltic Slavs, in 983, led to the destruction of all trans-Elbian settlements. Meanwhile feudal anarchy was raging in many parts of the disintegrating empire of the Carolingians.

These times of turmoil, while they checked or retarded colonization

in some regions, and led to recession of settlements in other parts of the continent, could not, however, permanently cripple the European effort Medieval man, for social and economic reasons,⁵ was determined on the conquest of marsh and woodland. As early as the second half of the tenth century we have indications of what might be called "post-war reconstruction". Once again territories laid waste by raiders or feudal warfare were repopulated, and soon the offensive against virgin forests as well as coastal fens and flooded river-flats was resumed. France, after the middle of the eleventh century, entered her *âge des grands défrichements*; in Italy, too, large-scale reclamation of wooded and swampy land, which had been left untouched in ancient times, started soon after A.D. 1000,⁶ about the same time Flemings and Dutchmen were fast learning the art of draining by means of dykes and canals, a knowledge soon to be applied, by colonists from the Low Countries far away from home, to the marshes of Germany and the Slavonic East. England after the Norman Conquest had her own age of recovery, characterized by the colonizing enterprise of free peasants, who resettled devastated Yorkshire, and soon combined with the lords in attacks on ancient forest land.⁷

What was a rising flood in the eleventh, under the impact of new forces swelled into a tidal wave in the twelfth and the early thirteenth centuries. Clearing activities received a fresh impulse from the spread of the Cistercian Order. The "White Brethren", unlike their predecessors, the Benedictine monks, who had grown rich and comfortable, refused to lead the leisurely life of rent-consuming landlords. Reviving the ascetic ideals of early monasticism, the Cistercians established their new monasteries in the wilderness, intent on gaining their livelihood by the work of their own hands. Assisted by *conversi* (lay brethren) they organized large-scale clearing and draining wherever they went. Moreover, since papal privileges for Cistercian houses never failed to confer upon them the right to retain the tithes from assarts which they tilled with their own hands ("decimas novalium quae propriis manibus colitis"), an incentive was perhaps created for competitive clearing. Rather than permanently lose a potential revenue which was fast becoming the most important source of income derived from land, the tithe owner

⁵ Some historians have stressed the former motive, the desire of the peasant to preserve or improve his status by acquiring new land, others have paid more attention to the growth of population, which made the opening-up of fresh soil imperative. The attitude of the Crown and the lords towards clearing was not the same at all times and in all places. The wish to preserve the forests sometimes militated against the desire to increase the revenue from land.

⁶ Gunnar Mickwith, "Medieval Agrarian Society in its Prime Italy", *The Cambridge Economic History*, Vol. I, p. 323.

⁷ Not all inroads on the woodland were a gain to the economy, however. One has to distinguish between the mere cutting-down of timber (for charcoal burning, firewood, building, or similar purposes) and genuine assarting (i.e., the grubbing-out of trees). There is evidence of reckless devastation of forests in eleventh- and twelfth-century England, which did not lead to any increase of ploughland, while it seriously diminished the beech and acorn mast for the swine of the villagers. See Reginald Lennard, "The Destruction of Woodland in the Eastern Countries under William the Conqueror", *Economic History Review*, Vol. XV (1945), pp. 36 ff.

could be expected to encourage peasants and small proprietors to lay hand on the waste. The rapid growth in the twelfth and thirteenth centuries of urban centres of consumption provided yet another powerful stimulus for the conquest of new arable surplus production for sale in the market promised increasing cash income to both lords and peasants.

Meanwhile this process of opening up new land in the old-settled regions of Europe—the founding of *villes neuves* in northern France and of *Waldhufen* villages in Germany, the dyking of coastal marshes in the Low Countries, and the encroachments on the common woods in England (as evidenced by the Statute of Merton, 1235)—had its counterpart in the extension of settlement into the sparsely populated areas of the Central European East. With some pauses and minor reverses, the eastern “frontier” of Europe, from the eighth century onwards, kept moving into those half-empty and economically under-developed spaces.⁸

In the South-East, German colonists pushed settlement into the foot-hills and valleys of the Alps, and eastward along the middle course of the Danube, as far as the Hungarian plains. Even today a number of Slavonic and other non-Germanic names of mountains and rivers survive in the eastern Alps as a reminder that the land was not altogether empty when the first Bavarian and Franconian settlers moved in. But no resistance was met, and the thinly scattered native population of Slavonic stock was soon absorbed, and lost its racial identity. It was different in the North-East, where the tribal organization and the religious loyalty of the trans-Elbian Slavs were sufficiently developed to withstand for some time the combined onslaught of sword and cross. Three times in the course of less than a century—in 983, 1018, and 1066—fierce uprisings among the Wends forced the Germans to withdraw behind the lower Elbe; and it was not before 1125 that the river was crossed permanently, and the vast tracts of the European North-East were thrown open to German, Dutch, and Flemish settlers.

The racial conflict of Saxon and Slav and the missionary effort of the Christian Church among the pagan Wends, are of no concern to Economic History, except in so far as military conquest and religious penetration created, in the early phases, the conditions of successful colonization. It is this aspect, i.e. the eastward spread of settlement and the opening-up of land that had been utilized only very scantily before the coming of the Western colonist, that is of chief interest to the economic historian of the medieval “frontier”. Before the barrier between the German and Slavonic worlds was broken down economic life in eastern Europe was largely that of hunters and collectors: fishing, trapping fur-bearing

⁸ The most comprehensive account in English of this frontier movement is to be found in James Westfall Thompson, *Feudal Germany* (Chicago, 1928), Part II; the most up-to-date treatment of its social and economic implications is Professor Hermann Aubin's article, “The Lands East of the Elbe and German Colonisation Eastwards”, *The Cambridge Economic History*, Vol. I, pp. 361 ff.

animals, and gathering wild honey were the main occupations, agriculture was crude, and played only a subordinate role. The primitive character of their economy is revealed by the fact that the Slavs did not know how to employ their labour forces "They sold them in bulk to strangers: the word slave, which is found in use among the Arabs of Spain as well as in all Teutonic and Romance languages, is the legacy of this export of men And the economic carelessness which lay behind it is clearly shown by the fact that these slaves worked excellently for their alien masters in most varied conditions "⁹ With the advent of the German and Flemish settler a new economic era dawned upon eastern Europe. Colonization inaugurated a fuller economic use of the land. From the standpoint of Economic History, the great eastward surge of the twelfth and thirteenth centuries was a secular shift of the European "frontier".

From what has been said so far about clearing and colonization it should be apparent that the rural population of Europe in the Middle Ages was not as immobile and unenterprising as an older view of mediæval society was inclined to suggest. Peasants in overcrowded villages, or at any rate their younger sons, were always ready to lend a curious ear to tales about distant countries, where land was known to be abundant, and lords and parsons were less exacting—colonial regions, where heritable tenure was rumoured to be the rule, and freedom from servile dues was reported to exist. How could the hard-pressed husbandman on the manors of western Germany or Flanders help dreaming of a brighter future, when he heard of a proclamation, drawn up by the bishops and nobles of Saxony, which called upon him to take possession of

the land of the Slavs, a country very rich in flesh, honey, grain, birds, and abounding in all products of the fertility of the earth, when cultivated, so that none can be compared unto it. So they say who know. Wherefore, O Saxons, Franks, Lotharingians, men of Flanders most famous—here can you both save your souls, and if it please you acquire the best of land to live in.¹⁰

Yet glowing descriptions were not always enough to lure the stolid Westphalian or Fleming into adventure. The colonial areas of the East must, after all, have seemed infinitely remote to the peasant of western Europe. Migration, he dimly knew, would mean a wearisome trek for man and beast across hundreds of miles, and afterwards hard work in the high woods and the treacherous swamps of a strange and possibly hostile country. The prospective settler wanted to be assured that he would not starve on the way, that he would get seed corn and implements in

⁹ Koebner, "The Settlement and Colonization of Europe", pp 51 ff.

¹⁰ Translation from the Latin by Thompson, *Feudal Germany*, p 497.

time, and that he would not have to start work in isolation. The princes and nobles of "Eastland", whether German or Slav, could not give him this assurance. If they wanted to attract colonists into their territories they had to employ agents, specialists in settlement, whose responsibility it was to survey the land, prepare the groundwork, finance the migration, in brief, to organize the movement and guarantee its success. Only so could recruiting be undertaken on any large scale. One must picture to oneself these *locatores* or promoters as men rather like the modern North American land agents, experienced, energetic, and persuasive fellows who understood the peasant, and knew how to gain his confidence. Some of them may have been enterprising rustics themselves; more often they seem to have come from the ranks of the nascent *bourgeoisie* or the minor nobility, even clergymen were found among them. But whether peasant or burgher, knight or parson, they all were men of vision, people with a flare for business and organization, true "undertakers"—the spiritual ancestors of the modern promoter.

By the middle of the twelfth century the eastward rush was in full swing. Thousands of stragglers as well as groups organized by agents were pouring into the colonial East. The borderlands along the Saale and Elbe rivers were occupied first; but early in the thirteenth century successive waves of settlers kept rolling eastwards, into Pomerania, Silesia, Moravia, and Poland. Isolated spearheads of Germans and Flemings, whose fame as colonists had spread far and wide, were called upon by the Hungarian Crown as early as the middle of the twelfth century to start clearings in the frontier forests of Transylvania. The Teutonic Order began to conquer and colonize in East Prussia and Lithuania in the thirteenth and early fourteenth centuries. By about 1350 German colonists were moving across Little Poland into Red Russia, and into the mountains of Upper Hungary. The world was not again to see anything like this until the days when the American settlers began to swarm out across the Alleghenies, early in the nineteenth century.

The economic results of these waves of migration must be viewed not only in the light of what the colonists accomplished themselves, but also with regard to what they taught the natives in whose territory they settled. The primitive economy of East Central Europe was gradually transformed by their example, as native princes and nobles began to realize the advantages to themselves of rousing, and giving scope to, the economic ambitions of their servile dependents. The latter were sometimes absorbed into German villages "under German law", i.e. under conditions of tenure similar to those granted the Western colonists. It was inevitable that the Slavonic peasant should learn, one way or another, to imitate the advanced techniques and forms of settlement of the newcomers, that he should adopt their money economy, and in some cases their language as well. It was this assimilation of the economic standards of Eastern Europe to those of the West which, as early

as the later Middle Ages, enabled the Baltic regions to produce large grain surpluses, and thus to become a granary of the European North-West, indeed the only major source of sea-borne supplies, before the fertile steppes of southern Russia began to pour forth their excess supplies of wheat in the first half of the nineteenth century.

One would like to form some idea of the effects on the European economy as a whole of all these vast additions to man's resources of cultivated land. To what extent, and for how long, was the pressure of population on food lifted, as new acres were added to the village plough-land in the old-settled districts, and as tens of thousands of people found new homes in the colonial East? A good deal of this increment, one may be sure, was absorbed by subsequent population increase, both among the people at home, and perhaps even more among the colonists. Settlers usually marry early and have big families. Some of these gains were also offset by land losses suffered in the West through vast inundations along the shores of the North Sea. Yet for some time the rate at which new land was made productive seems to have outrun man's capacity of multiplying. If this was indeed the case one might expect a more than proportional growth of the town and semi-rural populations. There are strong indications that such a disproportionate increase of non-agrarian producers did actually take place from the eleventh century onwards. Not only did Europe cover itself with a densely woven pattern of small market towns, interspersed with a few score of larger cities, the industrial history of the later Middle Ages testifies to the fact that it was found feasible to set free, partially at least, a growing proportion of producers for purposes of secondary production.

In this connection one is likely to think first of all of the rise of urban and rural textile industries in Italy and Flanders, and, somewhat later, in England and South Germany. But the feverish building activities from the eleventh to the fourteenth century are an equally striking case in point. The construction of great cathedrals and castles, the erection of town walls and guild halls, not to mention the building of thousands of parish churches and houses in the new towns and villages, required the concentration of much labour and equipment. For every large undertaking of this sort labourers had to be hired or impressed by the score. In addition, skilled masons, layers, carpenters, and numerous other craftsmen, had to be employed. Great quantities of timber and stone (or bricks) and lime had to be procured. The felling and sawing-up of hundreds of large trees for the high scaffolds and roofs, the quarrying of tons of sand and stone, the burning of thousands of bricks and many carloads of lime, must have required, directly or indirectly, the labour of hundreds of workmen over long periods of time. It needs some imagination to realize the full extent of the effort involved. The efficiency of the individual worker, assisted as he was by crude equipment only, was certainly much lower than it is today. Nor must one forget the preparatory

operations, such as the labour in the woods of the charcoal-burners, who had to provide the lime-kilns with the necessary fuel. One must also remember the transportation services. Many drivers, oxen, and carts were needed to carry the raw materials to the place of work; and not only the raw materials for the building, but also the food consumed by the crowd of workmen on the spot. One hundred workers required, on the basis of our previous figure of eight bushels, something like 50,000 pounds of wheat per year!¹

If European society could afford to divert the labour of so many people, over long periods of time and in hundreds of places, from primary production to the creation of edifices, and if it was possible for it to set aside thousands of acres for the growing of vines, hops, and dye plants, if late-medieval man was in a position to spare an increasing proportion of his land—pasture and even some arable—for the raising of sheep for wool production, and if he found it feasible to grow enough food without having to use fully the hands of those thousands of men and women whose main occupations became spinning and weaving: then it must be assumed that medieval society, through the conquest of marsh and forest, had secured a breathing-spell in the eternal race between man's fertility and the diminishing returns from labour on land.

To assert that it was this temporary easing of population pressure which caused the slackening and ultimately the almost complete cessation of clearing and colonizing activities in the later Middle Ages, would be to state more than can be proved with historical methods. Even logically, the argument would not be cogent; for improvements in agricultural technique might have made it more economical for late-medieval man to intensify cultivation of the available land rather than increase acreage, as settlement approached the less fertile or otherwise less desirable land. But Economic History is not aware of any such spectacular intensification, except perhaps in some very limited areas. The English wheat yield per acre, if it did not actually decline after the thirteenth century, as some authors were inclined to believe, remained almost stationary from 1200 to 1450.¹¹ Comparable statistical information on Continental wheat yields does not seem to be available. But there appear to be no indications anywhere of spectacular increases. Commutation of labour services into money payments, it is true, should have enabled the tenants to intensify work on their own land substantially; and some increase in output was, of course, necessary in order to raise these money dues. Yet conceivably many an overworked peasant preferred an increase in leisure to the gains he might have derived from greatly intensified production. Callous and cynical seigneurs—not the best of witnesses, to be sure—insisted that the villeins never exerted themselves except under duress or economic necessity:

¹¹ M. K. Bennett, "British Wheat Yield per Acre", pp. 13 ff.

Rustica gens,
Optima flens,
*Pessima gaudens.*¹²

This much, then, seems to be reasonably certain. Had the pressure of population been heavy enough, the additional effort necessary either to wrest increasing returns from the old land, or to push settlement into poorer or for other reasons intractable regions, would have been forthcoming. As it was, extension of settlement in the West and colonization in the East lost their momentum towards the end of the thirteenth, and exhausted themselves before the middle of the fourteenth, century, that is to say some time before the Black Death caused a sudden and very substantial decline of the European population. The year 1350, a date which roughly marks the end of the great age of clearing, has perhaps an even stronger claim to being regarded as the turning-point from medieval to early modern economic history than the year 1500, which is commonly chosen for periodization.

The Great Plague, which all over Europe left deserted farmsteads and depleted villages in its wake, would have made new inroads on wood and waste difficult and unnecessary in any case. As it was, poorer land having been reached in many regions as early as the thirteenth century, there is evidence of some recession of settlement after, and even before, the pestilence. As the European population recovered from the ravages of the epidemics—in England at least the recuperative process seems to have been amazingly rapid¹³—reclamation of land was not resumed on any large scale. This is not to deny that there was still some piecemeal assarting and draining going on here and there. A few German colonists were still on the move in south-eastern Poland as late as the fifteenth and sixteenth centuries. In the fens of eastern England, where local reclamation had been going on from the twelfth to the fourteenth century,¹⁴ a few experiments in draining on a somewhat larger scale were started in the late-fifteenth and the sixteenth centuries.¹⁵ The severe timber crisis, which struck England in Elizabethan and Jacobean times, and led to the substitution of coal for wood,¹⁶ while it testifies to progressive deforestation in the British Isles, must not, however, be mistaken for evidence of large-scale clearings. The timber shortage in England was the result of vastly increased consumption of wood for fuel and building purposes, an increase caused chiefly by what Professor Nef has described as “an early industrial revolution.”¹⁷ As stated previously, the reckless cutting-down of timber belongs in a different category from

¹² “Rural folks are at their best when they weep, at their worst when they are jolly.”

¹³ See A. P. Usher, *An Introduction to the Industrial History of England*, chap. iv.

¹⁴ Darby, *The Medieval Fenland*, pp. 43 ff.

¹⁵ *Ibid.*, pp. 167 f., and H. C. Darby, *The Draining of the Fens* (Cambridge, 1940), pp. 11 ff.

¹⁶ See below, pp. 316 ff.

¹⁷ See below, pp. 291 ff.

that of patient clearing, undertaken for the purpose of extending the arable.

The late-seventeenth and the eighteenth centuries saw, not, indeed, the revival of an all-European reclamation movement, but the execution, in western Europe, of a few projects on a truly grand scale, such as could never have been thought of before the age of great capital concentration, of organized public power, and of scientific methods. Characteristically, all these undertakings were drainage works, which required all three of these: the disbursement of large funds over a long time, the helping hand of the State, and technical knowledge beyond mere empiricism.

More than 200,000 acres of land were reclaimed from the sea in the Low Countries to the north of the Meuse between 1540 and 1785.¹⁸ Still vaster in scope was the systematic draining of the English fens.¹⁹ Numerous schemes of "desiccation" had been afoot, and a few had been started, not without encountering fierce local resistance, early in the seventeenth century. The characteristic feature of this phase was the appearance on the scene of groups of "adventurers" who undertook the financing and construction of large engineering works, such as the cutting of channels and outfalls, the banking of watercourses, and the building of sluices. Any such project involved heavy capital outlay, both during the period of construction and afterwards for the maintenance of the works. But these capitalist "undertakers" (among them His Majesty King Charles I) expected to recompense themselves handsomely with part of the land that was to be made productive as a result of their enterprise.

The Civil War caused an interruption in these activities, but after 1650 work was resumed in full earnest according to plans submitted earlier by a Dutch engineer, Cornelius Vermuyden. He superintended the draining of the "Bedford Level", a fen district named after the Earl of Bedford, who headed a corporation formed for this purpose. Similar efforts in neighbouring regions seem to have met with only indifferent success. There was a constant danger of re-inundation, as the outfalls of the rivers tended to get silted, and the watercourses continued to rise relatively to the surrounding country. (This latter trouble was caused by the shrinkage of the drying peat on the surface of the reclaimed land.) Even Vermuyden's great work would not have stood the test of time, had it not been saved by the installation of pumps, driven by windmills in the eighteenth, and by the more reliable steam engine after the first quarter of the nineteenth, century. Pumping works also made the successful draining of the northern fenlands, an area of some 360,000 acres, a feasible proposition.

¹⁸ Josef Kulischer, *Allgemeine Wirtschaftsgeschichte* (Munich and Berlin, 1929), Vol. II, p. 73, note 2.

¹⁹ Darby, *The Draining of the Fens*, has given a comprehensive history of the work from 1500 to the present day.

Turning from England to Germany, we find large-scale draining operations going on about the middle of the eighteenth century.²⁰ Under the guidance of the Prussian State vast marshes covering the river-flats of the Oder, Warthe, and Havel were reclaimed and settled. Frederick the Great, after the successful completion of the work, in 1753, proudly claimed to have "conquered a province in peacetime".

While the nations of western and central Europe, in the face of growing populations,²¹ were straining every nerve to get their last reserves of potentially fertile land under cultivation, developments were shaping up in the distant lowlands of Hungary and on the steppes of southern Russia that were to add before long vast new sources of food supply to Europe's limited resources. For almost a century and a half, from 1541 to 1686, the great plains of Hungary had been under Turkish rule. Misgovernment, continual warfare along the western frontier, and the ravages caused by the reconquest left the country in a state of desolation. An area of more than 11,000 square miles, "the central and richest part of Hungary, was during those years laid so waste that for many leagues no habitation of living man survived. When the Habsburgs recovered this once so pleasant land, they recovered a desert."²² The southern part of the trans-Danubian district, the so-called Banat, was also sadly depopulated.

Thus once again a "new country" was opening up in Europe, beckoning to immigrants who were willing to start a new life under a strange sky. And once again they came: young peasants from the congested villages of South-West Germany and Lorraine, singing melancholy farewell songs as they floated down the Danube into the distant country in the East, which they vaguely referred to as *Griechenland* (i.e. Greece).²³ Serbian families came, 37,000 of them, under their own Patriarch, fleeing before the Turks across the lower Danube; hard-working Slovak colonists, descending into the fertile plains from the highlands in the North-West; Walachs, crossing the mountains of Transylvania; and the ubiquitous Greek and Jew, coming from nowhere into what was to be known as the "Hungarian Canaan".²⁴

At first cattle breeding, the old staple industry of the Hungarian prairies,²⁵ was resumed on a large scale. It required but little capital; and, something that was perhaps even more important, the output

²⁰ Kulischer, *Allgemeine Wirtschaftsgeschichte*, Vol II, p. 42.

²¹ W. Bowden, M Karpovich, and A. P. Usher, *Economic History of Europe*, chap. I.

²² C. A. Macartney, *Hungary* (London, 1934), pp. 78 ff. See also Henry Marczali, *Hungary in the Eighteenth Century* (Cambridge, 1910), pp. 46 ff.

²³ This writer remembers the melody and words of one of those simple old folk-songs, still known and sung in pre-war Austria. Its opening lines run like this:

The skiff is swinging away from the land. Adieu.
We're faring into Grecian land,
Farewell, beloved fatherland. Adieu.

²⁴ Macartney, *Hungary*, pp. 82 ff.

²⁵ Drovers of long-horned Hungarian oxen were a familiar sight in the fifteenth and sixteenth centuries all along the roads leading westward into Austria and beyond into southern Germany.

transported itself to the centres of consumption. But before long the landowners and their tenant farmers discovered that their oxen were grazing on land capable of producing the finest wheat and maize after but one ploughing. Thereafter the Danubian prairies steadily gained in importance as a source of grain supply for central Europe. But for the colonial development of eighteenth-century Hungary, the rapid growth of population and urban industries in the Austrian Empire during the nineteenth century would not have been possible. As it was, Hungary in the last decade of the nineteenth century had an average annual wheat output of 170 million bushels, more than Canada and Argentina combined. Her yearly exports at that time amounted to nearly fifty million bushels, making the country third among the world's leading wheat exporters.²⁶

The economic history of the Hungarian plains after the expulsion of the Turks has its parallel on an even vaster scale in the mass colonization of Russia's Black Sea regions, in the second half of the eighteenth century. The famous belt of black earth on the left bank of the middle Dnieper had been under the plough since the seventeenth century; but farther south vast stretches of virgin soil were still awaiting the coming of man. A map of the Ukraine, drawn up about the middle of the seventeenth century by a French engineer,²⁷ describes these southern steppes between the lower Dniester and the Donets as "loca deserta". Subject to Tatar invasions, these regions were indeed virtually uninhabited, save for roving bands of Cossacks. They were under Turkish sovereignty: Peter the Great had failed to gain a permanent foothold on the Sea of Azov. But as a result of victorious Russian campaigns in the second half of the eighteenth century the entire north shore of the Black Sea was wrested from the Turks, the Crimea, the stronghold of the Tatars, was annexed, and the colonization of "New Russia", as those territories came to be known, began. "In the decade after 1775, 4,400,000 hectares (about 11 million acres) of land were distributed."²⁸ Enormous tracts of land, to be peopled in the next few decades by the transplanting of many thousands of serfs from estates in the old-settled regions of Russia, passed into the hands of great noblemen as imperial largesse. Two princes received 500,000 and 380,000 acres respectively. "Fifteen hundred hectares (3,800 acres) could be had by any landlord who undertook to settle thirteen peasant families and pay the Exchequer 2½ copecks a year on each hectare. Potémkin also encouraged the settlement of efficient small farmers—from the Baltic provinces and even from the islands of Dago and Oesel. There was also a continuous and widespread immigration of Serbs, Moldavs, Czechs and Germans. In particular,

²⁶ Paul de Hevessy, *World Wheat Planning*, p. 493.

²⁷ This map is reproduced in Michael Hrushevsky, *A History of the Ukraine* (New Haven, 1941), after p. 152. In addition to this work consult W. E. D. Allen, *The Ukraine. A History* (Cambridge, 1940).

²⁸ Allen, *The Ukraine*, p. 231.

every German settler received 65 hectares from the state in addition to a money grant and timber for building purposes "²⁹" Even Jews, until 1804 legally debarred from landholding, were encouraged to acquire land in the South, and Jewish agricultural colonies were founded under government auspices throughout the first half of the nineteenth century.³⁰

The settlement of New Russia exhibits all the essential features of large-scale colonization: limitless land of marvellous fertility, settlers and fugitives flocking together from the four corners of the earth, a rapid growth of population, and the development of a staple export. Wheat, the typical crop of the virgin steppe lands, held a predominant position from the very start. No sooner had the Napoleonic Wars ended than shipments of wheat began to flow out through the ports of southern Russia at an ever increasing rate. Odessa, founded by French émigrés in 1794 on the site of a Turco-Tatar hamlet, was soon to rival, and before long to surpass, Danzig, the old Baltic grain port. The long haul did not prevent British ships from fetching large quantities of wheat from the Black Sea, whenever inferior harvests and an easing of the English Corn Laws made heavier imports necessary and practicable, as was the case from 1825 to 1832, again after 1837, and more especially after the repeal of the Corn Laws in 1846. As the railway began to penetrate the Russian interior the conditions for the export of Ukrainian and New Russian grain through the Black Sea ports improved. But in the sixties and seventies Russian wheat shipments to Britain declined relatively to British imports received from North America. Nevertheless, total Russian wheat exports, subject to climatic variations, showed a tendency to increase, and in the late eighties surpassed those of the United States by a substantial margin. By that time "Russian exports had found a nearer market in Mediterranean Europe. After 1880 the deficits of several of the continental countries increased rapidly, so that southern Russia was able to market large stocks without sending the wheat all the way to England."³¹ In the decade before the First World War it looked as if Russia had permanently outdistanced the United States: from 1904 to 1914 she ranked first among both the world's producers and exporters of wheat.³²

It was owing to the productivity of the Danubian and South Russian

²⁹ *Ibid.*, p. 231.

³⁰ *Ibid.*, p. 264. The Jews made poor farmers, though; Leon Trotsky, himself a descendant of one of those Jewish settlers, testifies to the complete failure of the experiment.

³¹ Bowden, Karpovich, and Usher, *Economic History of Europe*, p. 583.

³² The following figures are taken from De Hevessey, *World Wheat Planning*, pp. 664 f and the table after p. 684

Wheat production (in millions of bushels)

	U.S.A.	Russia
1904-09	654.7	640
1909-14	681.8	815

Wheat exports (in millions of bushels)

	U.S.A.	Russia
1904-09	115.5	122.9
1909-14	105.5	164.2

steppes that the Malthusian devil, who to many an anxious observer seemed to be playing a winning game in the first half of the nineteenth century, was once more cheated of his stakes. But South Russia had been the last European "frontier": after one thousand years of advancing waves the outer limits of cultivable land had been reached. If the population of the Old Continent was to continue to increase at the rate prevailing in the first half of the nineteenth century, Malthus' "positive checks" could be expected to become operative in all their ruthlessness before long.

True, the new science of soil chemistry could be trusted to teach man how to restore vital elements to his tired land. Deep ploughing, subsoil drainage, a rational rotation of crops, and the use of agricultural machinery—methods of "high farming" already practised to perfection by the English—if adopted by the Continental agriculturist, would also go a long way towards raising heavier crops. As a matter of fact, Continental farming, by the middle of the nineteenth century, had made encouraging progress along these and similar lines, and improvement in the second half of the century was even more rapid.³⁸ Potato growing (to give only a few illustrations), adopted only hesitantly by the French before the Revolution, but spreading fast in Germany after the seventeen-seventies, had become a major branch of agriculture in both countries by 1850. It not only served to reduce the fallow, but made it possible to utilize soils that would have been too poor for the successful production of wheat. Indirectly, by providing a substitute for grain in the distilling of liquor and industrial alcohol, the new plant made large quantities of wheat and rye available for human consumption in the form of flour. Another dynamic crop, the sugar-beet, if properly attended to, could also be fitted into a system of successive crops, thus releasing land that had hitherto been fallowed. Grown on a very large scale in Germany, Bohemia, and France, the beet not only provided a new source of carbo-hydrates for the human diet, but also excellent cattle fodder in the form of beet pulp.

Yet despite these and other vast improvements Europe could not herself have provided for her growing food and fibre requirements in the long run, except by diverting an increasing proportion of her manpower and equipment to primary production. The story of how Europe was spared this alternative need not be told in detail in these pages. An important chapter of it, the opening-up of the American and Canadian West, was enacted on this continent, and is still within living memory. It must suffice to recall that it was a technological revolution in the means of transportation that made it possible for the European consumer to draw upon the vast interior plains of the new continents for supplies of staple foods and raw materials. The steamship and the rail-

³⁸ T. H. Clapham, *The Economic Development of France and Germany, 1815-1914* (4th ed.; Cambridge, 1945), chaps. I, II, VIII, and IX.

way lowered costs of transportation sufficiently, and more than sufficiently, for American, Canadian, Argentinian, and Australian wheat to compete successfully with European-grown grain; for Australian wool to feed the spindles and looms of industrial Europe; and for livestock as well as frozen meat from overseas to invade the urban markets of the Old Continent. Thus, in the second half of the nineteenth century, the outside world began to help in feeding and clothing Europe.

Before this last and most recent extension of man's acreage all previous additions to his soil resources seem to pale into insignificance. What were the *grands défrichements* of medieval France compared with the nineteenth-century clearings in North America; what was the repopulation of the Hungarian plains compared with the settlement of the Mississippi basin? Yet Economic History has its own "theory of relativity": its measuring rods change when applied to different systems of events. Quantities in History have very little meaning in themselves; they acquire significance only within a given framework of related variables. Furthermore, it is the rate of change rather than the absolute magnitude of any increment that is of interest to the historian. Thus, adding a few hundred acres of assarts to the ploughland of a medieval village, or founding a colonial town in the Slavonic East may very well have involved an effort, and caused economic repercussions, comparable to those required and brought about by the opening-up of a whole new county in nineteenth-century North America.

* * *

It would be difficult to decide whether man in the course of history has achieved more through making additions to his land, or through improved utilization of his available soil. To the economic theorist, these two methods of raising production, extension of the cultivated area and intensification, are alternatives. Economic man, if he wants to increase his output, is represented as choosing the one or the other, having regard to relative marginal returns. Historically, these two forms of economic endeavour frequently shade off into each other, and dynamic periods of economic history have almost always contained large elements of both. True, clearing and draining in some cases, as, for instance, when the Dutch reclaimed coastal regions that had been permanently flooded, did mean conquest of land not previously used at all. But in many other instances what appears on the surface as reclamation of new land reveals itself to the historian as a process of utilizing more fully soil that had not been entirely unproductive before. Large parts of the English fens, for example, while regularly flooded in winter time, yet served as grazing grounds in dry summers. Nor were the medieval waste and wood devoid of all economic importance: the edge of the deciduous forest and the heath provided indispensable pasture for the livestock of the villagers from early spring until late in the autumn.

Even the deep forest and the alder swamp did yield something: wild honey and wax; fur and fowl; mushrooms, berries, and wild fruits. Similarly, the transition from a two - to a three-course rotation, while it always involved a more intensive utilization of the soil—each acre was made to yield four instead of three harvests in the course of six years—was nevertheless usually associated with an extension by one-third of the land under grain at any given time.

Nevertheless, the generic term “colonization”, if sometimes used loosely to include both these processes, suggests primarily extension of settlement and cultivation into virgin territory. The term “improvement”, on the other hand, generally applies to processes of intensification in the narrower sense of the word, such as the introduction of new crops, enrichment of the soil through marling and systematic manuring, a more rational distribution of the seeds through drilling, etc. It is with some aspects of “improvement” that the following pages are to deal.

The impressive record of the Middle Ages in the way of clearing and colonization has perhaps tended to overshadow medieval achievements in the way of improved utilization of the cultivated land. These accomplishments, if slow, were solid enough. Initially, medieval “improvement” simply meant the penetration of Mediterranean standards of soil utilization into areas previously farmed extensively, and the adoption of those mature standards by peoples not hitherto accustomed to economizing the soil “The sharply marked frontier which, in the last era of ancient history, divided the lands of Roman-Hellenic civilization from those of the barbarians divided also, so to speak, two spheres of the estimation of the soil But when the barrier between the Roman and the barbarian worlds broke down, the traditions of the classical agrarian civilization began to influence the new peoples; who, at the same time, unable to wander any further, had to accustom themselves gradually to an economic utilization of whatever lands they now occupied.”³⁴

This process, the economic assimilation of North-West European intensity standards to those of the Mediterranean, had already started in early Imperial times in Gaul, parts of Britain, the Danubian provinces, and Upper Germany; but it had been partly nullified during the age of invasions. It had meant the adoption of a system of semi-permanent instead of shifting cultivation, and had led to a relative recession of cattle breeding in favour of arable farming. The Middle Ages then saw the gradual extension of these maturer forms of soil utilization to regions not formerly subject to Roman influence. Crude and wasteful methods, generally practised by the Germans prior to the migrations, such as the burning-over and temporary cropping of light woodland, or the shifting cultivation of grassland, gave way slowly to two-course and, from Caro-

³⁴ Koebner, “The Settlement and Colonization of Europe”, pp. 2 ff.

lingian times onwards, three-course rotation. The latter represented an adaptation of, and an important improvement upon, the Mediterranean technique. Strictly governed as it was by the necessity to conserve moisture, Mediterranean agriculture had to use "dry farming" methods: it could not dispense with regular summer fallow, except on irrigated land and in limited areas of exceptionally heavy rainfall. Trans-Alpine agriculture was under no such climatic handicap. Precipitation in the North is abundant, and medieval Frenchmen, Englishmen, and Germans, given sufficient manure, were free to advance towards a system of cultivation under which land was rested only every third year.

The qualification just introduced—the dependence of intensification upon an adequate supply of dung—has touched upon one of the severest limitations imposed upon medieval husbandry: its lack of sufficient manure. Farming, in the Middle Ages and long after, was caught in a vicious circle. For, in order to improve his cultivable land, and to work it intensively, the medieval tiller of the soil would have needed more livestock than this land, under the prevailing conditions of utilization, was capable of maintaining. It is not certain that intensive cultivation would have required a very much larger number of draught animals; it certainly would have required more manure than was produced by the small number of cattle permanently maintained on the farm. Yet it was impossible to increase their number, since there simply was not enough fodder for them.

The crucial question was that of winter feeding. During the open season, the farm animals grazed on the fallow fields, in the woods, and on the waste; and while a certain amount of their droppings was lost to agriculture during this period of summer pasture, the cattle, sheep, and swine were able to gather sufficient nourishment, even if only of a poor quality, to maintain themselves without drawing upon fodder produced on the cultivated land. The problem was how to keep the animals alive during the winter. There were no root crops on which to feed them in the stable; and, in the absence of artificial meadows, there was only a very little hay stored in the loft. In these circumstances, the medieval peasant was compelled to slaughter before the onset of winter all his animals except those that were indispensable for breeding and tillage; and even these were often half-starved before the return of spring. We hear of farmers who had to pull their cows by the tail to the pasture in early spring: the animals were too weak to stand on their legs. Very little stable refuse could be expected from small numbers of ill-fed quadrupeds, and the under-manured soil in turn gave only scanty yields.

In order to break through this vicious circle it was necessary for the agrarian economy to free itself from the tyranny of custom. Three major requirements had to be fulfilled, if medieval agriculture was to escape from that self-defeating round of limitations. In the words of Adam

Smith, "Without some increase of stock, there can be scarce any improvement of land, but there can be no considerable increase of stock but in consequence of a considerable improvement of land, because otherwise the land could not maintain it."³⁵ It was, therefore, necessary, first of all, to develop specialized fodder crops, such as turnips and clover, some of which, far from exhausting the soil, actually tend to enrich it through nitrogen fixation. This fact, though of course not its biochemical causes, had been known to the Romans,³⁶ and was, it seems, rediscovered towards the close of the Middle Ages. But in order to be able to apply this knowledge it was necessary, secondly, to free the land from all communal restrictions, and permit its full individual use. An increase of livestock and improvement of land, "two events which must go hand in hand, and of which the one can nowhere much outrun the other,"³⁷ required, thirdly, that man should become economically rational, i.e. that he should submit to the guidance of price incentives rather than routine. Given this attitude, improvement and an increase of livestock would, according to Adam Smith's analysis, eventually take place whenever the prices of meat or dairy products were high enough to make it profitable for the farmer to feed his animals on produce from cultivated land.³⁸

It would seem that very little is known about the purely agronomic aspects of the development of fodder crops in its medieval beginnings.³⁹ Apparently, as in so many other fields, the Middle Ages were able to draw, to some extent, upon the classical legacy, either directly or through the medium of Arabic technique. The Romans had known manured and irrigated meadows, and the ancient practice of cultivating grassland appears to have survived, if only sporadically, into the Middle Ages. However, alfalfa, the most highly valued fodder crop of antiquity, seems to have almost disappeared in Europe during the Dark Ages.⁴⁰ Turnips, perhaps another heritage from Roman husbandry, were grown in the Middle Ages, in certain districts even as a field crop, but more usually on a strictly limited scale, as garden plants for human consumption.

It was only in the last centuries of the Middle Ages that systematic cultivation of fodder crops developed on a large scale, on the well-watered and fertile soil of the Low Countries. Cattle farming, resting on the basis of abundant grassland, and secure of its markets, had long been a pre-

³⁵ Adam Smith, *An Inquiry into the Nature and Causes of the Wealth of Nations* (ed by Edwin Cannan; Modern Library), p. 222.

³⁶ Charles Parain, "The Evolution of Agricultural Technique", *The Cambridge Economic History*, Vol I, p. 126.

³⁷ Adam Smith, *The Wealth of Nations*, p. 222.

³⁸ *Ibid*, pp. 148 ff. and 220 ff. Adam Smith speaks only of the price of butcher's meat as the determining factor of improvement; but it is clear that sufficiently high prices for milk, butter, or cheese would have the same effect. See also below, p. 34.

³⁹ Our present knowledge of medieval agricultural technique is well summarized by Professor Charles Parain "The Evolution of Agricultural Technique", *The Cambridge Economic History*, Vol. I, chap. iii. Our account is largely based on this work.

⁴⁰ Stevens, "Agriculture in the Later Roman Empire", p. 98.

dominant feature of Flemish husbandry. Abundance of manure in turn made it possible for the Flemish farmer early to dispense with fallow; from the end of the thirteenth century onwards, turnips and clover were fitted into a system of continuous rotation, thus strengthening still further the foundations of cattle raising. We hear of inhabitants of whole districts living by fattening cows which they bought lean in neighbouring regions.⁴¹ By the end of the Middle Ages the countryside of Flanders was unlike any other in northern Europe. Flemish *livres d'heures*, those beautifully illuminated calendars from the late fifteenth and early sixteenth centuries, which never fail to depict haymaking in the month of July as the *sujet de saison*, show us lush meadows and luxuriant clover fields enclosed by neatly trimmed hedges: pictures which, but for the medieval attire of peasants and cavaliers, might well be mistaken for representations of an eighteenth-century English landscape.

This similarity of scenery is not surprising; for the English, from the seventeenth century onwards, became eager disciples of the Flemish and Dutch pioneers of intensive farming. But a change in technology which, in a country of ancient enclosure such as Flanders, could be carried through without major dislocations, in the manorialized open-field regions of the English Midlands required radical rearrangements of property rights and the abolition of old communal practices—transformations sufficiently sweeping to warrant the use of the term usually applied to them “Agrarian Revolution”.

The history of the Tudor enclosures, limited as they were in extent, and motivated, it would seem, not so much by a desire to intensify cultivation, as by the requirements of large-scale sheep breeding,⁴² need not detain us here, the less so since this volume contains a substantial part of Professor Tawney's classic account of those agrarian changes.⁴³

Information is scanty about the rate at which enclosure of commons and arable proceeded in seventeenth-century England. The movement may have slowed down a little, it certainly did not cease. But it attracted less attention than in the preceding period: public resentment of rural innovations, so strong and vociferous in Tudor times, seems to

⁴¹ Parain, “The Evolution of Agricultural Technique”, p. 164.

⁴² However, while the opponents of enclosure in sixteenth-century England speak only of the sheep eating up corn lands and whole villages, the Elizabethan advocates of agrarian reform tend to stress the advantages to agriculture rather than to grazing. See, for example, Tusser's *Five Hundred Good Pointes of Good Husbandrie*, quoted by Lord Ernle, *English Farming Past and Present* (4th ed.; London, 1927), p. 66:

More profit is quieter found,
(Where pastures in severall bee);
Of one seelie aker of ground
Than champion [open field] maketh of three.
• • • • •

The t'one is commended for grain,
Yet bread made of beanies they do eate,
The t'other for one loaf have twaine,
Of mastlin, of rie, or of wheat.

⁴³ See below, pp. 142 ff.

have subsided, as an ever growing part of the nation learnt to acquiesce in, and shape their own behaviour according to, purely commercial considerations.⁴⁴ When the enclosure movement, in Hanoverian times, once more entered upon a furious *crescendo*, it received support from both Parliament and large sections of public opinion.

Meanwhile, the main object of enclosure had changed, too. It was no longer the grazier and wool grower, it was now the "improving landlord" and his progressive farmers, who provided the dynamics for the trend towards individual occupation of the land. "Dearth of bread was in Tudor times the most effective cry against enclosures; under George III it was the unanswerable plea for their extension. At the opening of the sixteenth century, enclosures did not always mean improved farming, the conversion of arable land into inferior sheep-walk was rather retrogression than progress." At the close of the eighteenth century, it at least meant the opportunity for advance and for the introduction of better practices."⁴⁵

What these better practices consisted in has already been broadly explained. The secret of intensive farming was the combination of stock breeding and grain growing on the basis of a rational crop rotation that enabled the farmer to "rest" his land by raising fodder crops instead of fallowing it. Selective breeding, careful weeding, systematic fertilizing, and other methods of soil improvement (e.g. marling, draining, etc.) merely served to ensure and accentuate success.

As stated above, improvement along these lines was conditional, not only on man's acquiring and mastering a new agrarian technology, and on an institutional framework of rural life which would permit an unhampered application of its methods, but also on market conditions under which it would be profitable to farm intensively. Adam Smith was inclined to attribute the agricultural improvements which he was witnessing to a rise in the price of butcher's meat relative to the price of bread, a change which made it "as profitable to employ the most fertile and best cultivated lands in raising food for [cattle] as in raising corn."⁴⁶ Historically, this was indeed one of the chief causes for the adoption of the new technology in England. But agricultural output as a whole—meat, grain, and dairy products being not only competing but jointly supplied—would have responded in any case to an urban demand which was increasing along all lines.

To account in any detail for this growing demand for foodstuff would be tantamount to writing an economic history of Britain in modern times. One would have to speak of England's growing wealth derived from foreign trade and industry, of her growing population and its con-

⁴⁴See R. H. Tawney, *Religion and the Rise of Capitalism* (Penguin Books), chap. iii.

⁴⁵Lord Ernle, *English Farming*, p. 57.

⁴⁶Adam Smith, *The Wealth of Nations*, p. 220.

centration in the metropolitan area of London⁴⁷ and other urban or semi-urban districts; last but not least one would have to deal with the new facilities of transport, the improved roads, and the spreading network of canals, which drew these large urban centres of consumption to the gates of the farms. All these factors combined to make intensification a paying proposition. But there remains one other question to be answered. The new farming, even in its preparatory stages, involved very heavy capital outlay. The wholesale redistribution of land, the fencing of the consolidated fields, the marlīng or draining of the soil, the construction of larger barns and stables, the acquisition of machinery, and the increase of livestock—to mention only the most obvious items of expenditure—all required large capital resources. Only a wealthy society could afford to undertake these investments. How was all this disposable surplus amassed? Again, the answer lies embedded in the very texture of past English history. Merchant Adventurers selling English broadcloth in the Netherlands; Elizabethan sea-dogs preying upon Spanish treasure ships on the Southern main; colliery owners and miners ever opening up new seams in the Tyne valley; English planters and their negro slaves growing sugar cane in the West Indies: all these and many other economic groups helped to accumulate, and peace helped to preserve, the nation's wealth, a substantial portion of which was to be sunk into the soil of eighteenth- and early nineteenth-century England. In due time this investment was to return high rents and handsome profits to landowners and farmers, and to the people at large a relative abundance of food in the face of growing numbers.

It remains to give some idea of the 'magnitude of achievement in the field of intensification. It will be recalled that the average yield of wheat on well-managed estates in the English Midlands during the thirteenth, fourteenth, and the first half of the fifteenth centuries has been estimated by Mr. M. K. Bennett as somewhere between 8 and 9 bushels per acre. This same author, after analysing certain statistical data presented by contemporary writers, arrives at an estimate of 11 bushels per acre for 1650, and 15 bushels per acre for 1750.⁴⁸ But the most rapid rate of increase in English wheat yield seems to have occurred between 1750 and 1850, during a century which, it must be remembered, saw, not only an unprecedented rate of population growth, but also the frantic struggle for grain during the Napoleonic Wars. The average yield for the decade

⁴⁷ London's population grew from about 50,000 at the beginning of the sixteenth century to about 340,000 in 1634 and about 530,000 in 1696. At the time of the first census, in 1801, the metropolitan area contained nearly a million inhabitants. See N. S. B. Gras, *The Evolution of the English Corn Market* (Cambridge, Mass., 1915), and F. J. Fisher, "The Development of the London Food Market, 1540-1640", *Economic History Review*, Vol. V (1935), No. 2, pp. 46 ff.

⁴⁸ Bennett, "British Wheat Yield per Acre", pp. 23 and 26.

1853-63 was close to 30 bushels per acre.⁴⁹ Modern English wheat yields have been higher still.⁵⁰

Nor is this the whole story. Man shall not live by bread alone, least of all a modern Englishman, who is a great consumer of beef and mutton. To gauge the progress made by English agriculture during the last two hundred years it would be necessary to compare the livestock-land ratio (that is to say, the number of animals supported on one acre of land) in the past with that in modern times. Unfortunately, for lack of statistical information no such calculation is possible for the more distant past. But the historian of English farming gives as his opinion that the introduction of turnip and clover husbandry not only doubled the number of the stock which the land would carry, but also its weight.⁵¹ Thanks to this development and, be it added, to the successful efforts of the stock breeders it became possible, for the first time in history, to provide, in Lord Ernle's words, "meat for the million".

To round off this foreshortened history of agricultural progress it would be necessary to describe the spread of the new technology to the different countries and regions of Continental Europe: the early progress, between 1815 and 1850, of rational farming on the large estates of eastern Germany, contrasted with the relative backwardness of the German South and West, where the slow-moving peasant long retained, together with his scattered strips, his old implements, and in many cases even the traditional three-course rotation; the almost stationary state, down to about 1860, of French agriculture, which was only slightly affected by the changes in tenure and landownership brought about by the Revolution, and the appearance of new crops referred to above.⁵² The story would then have to continue beyond the fifties, relating the more dynamic phase of Continental development ushered in by the railway, which brought the rural producer for the first time in touch with distant markets. But nothing of the sort can be attempted within the scope of this introduction. Sweeping generalizations would either be false or meaningless; the pace and direction of the changes varied too greatly from country to country, and even from district to district, to permit any summary. What Professor Clapham once wrote of the German peasant's awakening in the second half of the nineteenth century holds good, *mutatis mutandis*, of the rest of Europe. "Only the most elaborate series of local inquiries, so elaborate that even German patience has never carried them all out, could tell the full story."⁵³

⁴⁹ Bowden, Karpovich, and Usher, *Economic History of Europe*, p. 589

⁵⁰ De Hevesy, *World Wheat Planning*, p. 734, gives figures for the United Kingdom (an average yield of 33.4 bushels per acre in 1923-35), and the English county of Hertfordshire (an average yield of 31.1 bushels per acre in 1923-34).

⁵¹ Lord Ernle, *English Farming*, p. 189

⁵² See above, p. 28.

⁵³ Clapham, *Economic Development of France and Germany*, p. 215

Rather than give random illustrations of agricultural progress, such as statistics of agricultural machinery in use at different times in various countries, or comparative figures showing the increasing application of artificial fertilizers, we have decided to fall back, once more, on an abbreviation which has served us well before. Once again, wheat yields per acre are to furnish us with a yardstick of achievement. Here are some averages for the years 1923-35.⁵⁴

	<i>Bushels of wheat per acre</i>
Germany	30.3
France	22.0
Italy	19.7
Hungary	19.6

Even though we have no comparable data for the more distant past with which to contrast these figures,⁵⁵ there can be no doubt but that they represent a state of highly intensified production, especially when it is remembered that these yields were derived from soils that had long been cropped continuously.

If it were necessary to convince ourselves further of the strides Western man has made on the road towards the conquest of hunger, there is one argument, less precise, perhaps, but no less telling than any statistical comparison. It is the undeniable fact that famine, except for periods of almost complete economic paralysis (as, for instance, in post-Revolutionary Russia and, at the time of writing, in many war-stricken countries), has for a hundred years and more never been able again to raise its dreadful head in Europe. The words of the Lord's Prayer, "Give us this day our daily bread," among nineteenth-century Europeans were fast becoming an obsolete formula, oft-repeated, but no longer understood as a cry *de profundis* of the helpless human creature..

⁵⁴ Taken from De Hevessy, *World Wheat Planning*, p. 734.

⁵⁵ The figure of 26.2 bushels of wheat per acre yielded about 1750 on a Saxon estate, quoted from Theodor von der Goltz by Bowden, Karpovich, and Usher, *Economic History of Europe*, p. 59, is scarcely representative for eighteenth-century Germany, because, among other things, that yield was the result of excessively heavy seeding. Nor does it admit of comparison with modern yields without qualification, since the crop was harvested under a system of bare fallowing. Estimates of averages in the Italian province of Piedmont in the days before improvement put the wheat yield per acre as low as nine bushels. See Stevens, "Agriculture in the Later Roman Empire", p. 100.

IV. Toward the easing of toil: New sources of energy

*If the shuttle would weave and the plectrum touch the lyre without a hand to guide them, chief workmen would not want servants, nor masters slaves —Aristotle *The Politics* i:4.*

The economic concept of production may be defined as any activity directed to the satisfaction of human wants.¹ "Production" thus contains a purposive element, and differs fundamentally from the physical concept of "work", which is simply a quantity (obtained by multiplying the force acting on a body by the distance through which it acts), and pays, of course, no attention to the purpose, if any, served by the moving body. However, performance of "work" in a strictly physical sense, or expenditure of energy (chiefly in the form of kinetic energy and heat) is required for all production of goods and services.² It follows that the per capita amount of energy available for purposes of production is one of the variables determining man's productivity, and thus his economic welfare.

Economic progress, then, from this point of view, seems to require an increase of the gross per capita amount of energy, as well as a reduction of waste through loss of irrecoverable energy (Examples of successful solutions of the last-named problem are the invention of the wheel and, at a much later stage of technical development, of ball bearings, both resulting in great reductions of energy losses caused by friction. Reducing losses of heat by means of proper insulation is another example.)

But this energy calculus contains one form of energy which, to the economist (though not to the physicist), is unique: it is the energy derived from the cells of human muscles and brains. Unlike the demigod, who conducts the process of creation from on high with a wink of his brows, man is master-and servant, producer and agent of production, at one and the same time. In this latter role he must, so to speak, enter the workshop of production in person, and exert himself, mentally or physically, if he wants to accomplish things. But human effort, economically speaking, involves disagreeable features; and man may, therefore, be expected to aim at a further goal. He may be said to have striven to reduce, as far as possible, his own energy contribution to the sum total required for production: that is, to increase not only his

¹ The economic theorist may find it useful to narrow down the notion of "production" to activities "directed to the satisfaction of other people's wants through exchange". J. R. Hicks, *The Social Framework* (Oxford, 1942), p. 22. Economic History, since it knows of economic systems in which production for exchange, if not entirely absent, played only a very minor role, prefers to think of production as any activity directed to the satisfaction of human wants—one's own, the members' of one's household, or "other people's".

² Mental effort involved in production does not create any too serious problem. A physiologist might be able to tell us something about energy expenditure accompanying intellectual work.

total per capita supply of disposable energy, but more especially the supply of such energy as can be derived from non-human sources, e.g. beasts of burden, water, wind, etc.

Were this analysis of social motivation exhaustive, it would be surprising that technology should not have advanced any faster than it has. As a matter of fact, our calculus is, at best, only a first approximation to historical reality, chiefly because it is hardly legitimate to use the collectivist fiction "man" in this connection.³

Actually, slave-owning societies have never distinguished between energy put at their disposal by their slaves, and that provided by dumb creatures, or indeed by any other source. As Aristotle put it, with naive and brutal frankness: "And indeed the use of slaves and tame animals is not very different; for both with their bodies minister to the needs of life."⁴ Nor was the attitude of medieval society towards its semi-servile dependents, tempered though it was by the teaching of the Christian Church, very different from that of classical antiquity. The doggerel of a late-medieval German *Grundberr* reads almost like a coarse translation of Aristotle's dictum:

*The peasant is in oxen's stead,
Save that he has no horns on his head.*⁵

The same attitude, though expressed in the more refined language of eighteenth-century rationalism, is still recognizable in a statement of John Bellers'. He, too, regards it as the function of the social inferior "to minister to the needs of life" of the gentleman. "Labouring people", he says, "do raise and manufacture above double the food and clothing they use themselves"; were this not true "every gentleman must be a labourer and every idle man must starve."⁶

As stated before,⁷ inequality of social power has resulted in an unequal distribution of effort throughout economic history. Samuel, the republican of the Old Testament, knew what he was talking about when he warned his people of the manner of the king whom they craved. "He will take your sons, and appoint them for himself, for his chariots and to be his horsemen; and some shall run before his chariots.... And he will set them to ear his ground, and to reap his harvest, and to make his instruments of war, and instruments of his chariots." (I. Sam. 8:11-12)

From this point of view, and assuming a functional relationship between (physical) "work" and (economic) "effort", the "energy cal-

³ See Gunnar Myrdal, *Das politische Element in der national-ökonomischen Doktrinbildung* (trans. by Gerhard Mackenroth, Berlin, 1932), especially chap. vi.

⁴ Aristotle *The Politics* i. 5 (trans. by Benjamin Jowett, Oxford, 1931).

⁵ Der Bauer ist an Ochsen statt,
Nur dass er keine Horner hat.

⁶ John Bellers, *An Essay for Employing the Able Poor* (1714), quoted by V. W. Bladen, *An Introduction to Political Economy*, (Toronto, 1941) p. 80f.

⁷ See above, p. 4.

culus" of Economic History would have to be formulated something like this. Individuals and groups have tended to reduce their energy expenditure in the productive process along two lines: by exercising social power in order to increase the energy contribution of social inferiors (slaves, serfs, etc.), and, secondly, by increasing the supply of energy derived from non-human sources. It is this second endeavour which forms the subject of the following discussion.

It would seem that the relative difficulty of obtaining an increment of energy from the human source has, to some extent, determined the effort with which other sources of energy were utilized and developed. The unmechanical character of ancient civilization has often been commented upon. This may have been partially due to the prevalent practice of enslaving prisoners of war, especially barbarians, a custom which, over long periods of antiquity, caused the supply of slaves to remain abundant, and their price to be low.⁸ But ancient man was, on the other hand, not well provided with livestock, since the climate and geology of the Mediterranean basin are not favourable to cattle and horse breeding. Furthermore, animal power in ancient times, owing to a faulty method of harnessing and the absence of any protection for the feet, seems to have been utilized rather ineffectively.⁹ Yet mechanization, in an overwhelmingly agrarian economy, was rarely applicable as a substitute for animal power. Running or falling water, virtually the only source of inorganic energy known to the ancients (apart from the—very limited—use of wind for locomotion in sailing vessels¹⁰), could not be harnessed for such purposes as pulling a plough or drawing a wagon. Thus, muscular energy of beast and man remained supreme.

By and large, there were only two performances in agriculture and allied lines of production that were capable, at that stage of technical knowledge, of being mechanized: the grinding of grain into meal, and the raising of water for purposes of irrigation. The latter, so important in the dry summer climate of the Mediterranean, was indeed the one line of work in which mechanical contrivances, such as the lifting wheel, the Archimedean screw, and similar hydraulic devices, were widely used. Yet it seems that these "engines" were regularly worked by hand or animal power, and only rarely by water. The same holds good of the revolving flour-mill; more often than not this was operated by slaves or cattle. The water-mill, in its two forms, the horizontal and the vertical,¹¹ was known to the Romans, apparently from the first century B.C.,¹²

⁸ The decline of slavery in the late Roman Empire seems to have been due, among other things, to the long era of peace during the first two centuries A.D., which caused a shortage in the slave markets. See below, p. 61ff.

⁹ Abbot Payson Usher, *A History of Mechanical Inventions* (New York, 1929), pp. 114 ff.

¹⁰ Ancient ships, even when they had a sailing outfit, were essentially rowing vessels.

¹¹ See Richard Bennett and John Elton, *History of Corn Milling* (London and Liverpool, 1899), Vol. II, chaps. II and IV.

¹² It is not certain, however, that the vertical type, described by Vitruvius about 20 B.C., was put into use before the fourth century A.D.

but it was found only "in places where there was a heavy demand for ground flour, notably in Rome itself, or a deficiency of suitable labour, as in military regions".¹³ The use of wind power is described in the treatises of Hero of Alexandria (about 115 B.C.), but windmills were not known to classical civilization.¹⁴ All in all, what contributions to the total supply of kinetic energy could be derived from sources other than human and animal, remained insignificant.

As to heat, of no importance as a source of kinetic energy before the days of Newcomen and Watt, and of only minor importance in its direct utilization in an agrarian economy and under a Mediterranean sky, it, too, was derived exclusively from organic sources. Mineral fuel, in the Graeco-Roman world, if known at all, was certainly used only very casually.¹⁵

Today it is hardly necessary any longer to labour the point that the Middle Ages were by no means a period of standstill. No very intimate knowledge of medieval civilization is required to realize its intrinsically dynamic character. But while this is generally recognized as true for such aspects of medieval life as social organization, colonization, or the development of commerce, the magnitude of change in the purely technological field is, perhaps, not commonly visualized. Yet medieval achievement in this sector, especially in the field of energy utilization, was by no means negligible. The Middle Ages not only developed and extended the application of mechanical devices inherited from classical antiquity; they discovered, or (what amounts to almost the same thing) for the first time effectively utilized, sources of energy not hitherto known or harnessed.

Unlike the Graeco-Roman world, medieval Europe made very extensive use of running and—in the later Middle Ages—falling water as a driving force. The small water-powered flour-mill was a characteristic feature of the medieval countryside in France, Germany, and England; indeed it was almost as familiar a sight as the village church and the manor-house. Owned communally or by the seigneur, these mills partook of the character of public utilities. As such they enjoyed, like the market-place, a superior "peace" in the Teutonic laws, breaches of which were punishable by heavy fines.¹⁶ In fully manorialized regions the seigniorial mill also enjoyed a local monopoly in that the tenants were not permitted to grind their grain elsewhere.

The spread of the water-mill in late-Roman and medieval times has sometimes been associated with the decline of slavery, a process which, it is argued, made a fuller utilization of non-human sources of energy imperative. But substitution need not have gone in a mechanical direc-

¹³ C E Stevens, "Agriculture in the Later Roman Empire", p. 95.

¹⁴ Usher, *Mechanical Inventions*, p. 128.

¹⁵ J U. Nef, *The Rise of the British Coal Industry* (London, 1932), Vol I, pp. 1 ff

¹⁶ See the article "Mühlenrecht" by Eduard Rosenthal in *Handwörterbuch der Staatswissenschaften* (3rd ed., Jena, 1910), Vol. VI, pp. 799 ff.

tion. There was no reason why the medieval lord, who as a matter of course demanded from his serfs ploughing and carting services, should not have exacted a few additional days of work at the mill from his dependents and their beasts of burden. It would rather seem that it was the ease with which—in northern Europe—water power could be substituted for the muscular power of humans and animals, which accounts for the change. The primitive horizontal mills of early medieval times, though not the geared engines of the later Middle Ages, required only a small outlay in labour and materials. "They were housed in tiny buildings of the simplest construction and could be put together by any carpenter. The mill itself could be built in a week, and the value of the entire equipment was very small."¹⁷ Moreover, climatic conditions of north-west and central Europe, unlike those of the Mediterranean, guarantee a fairly regular flow of water, even in very small streams. In the Mediterranean regions, rainfall is irregular and frequently violent. Summer drought causes the beds of many small watercourses to dry up completely, but the torrential run-off in the spring and autumn would have threatened these flimsy structures with destruction. Medieval Frenchmen, Germans, and Englishmen only seldom encountered these hazards,¹⁸ and came to rely more and more on the motive power of water, not only for the milling of corn, but, with the spread of industrial specialization in the later Middle Ages, for such purposes as the fulling of cloth, the grinding and polishing of steel in the manufacture of cutlery and armour, the working of bellows and heavy hammers in furnaces and forges, the pulping of rags in paper-mills, etc. The last centuries of the Middle Ages were well on the way to a system of production in which some at least of the heaviest tasks were capable of being performed by machines.

This tendency was powerfully reinforced by developments in other fields of technological progress. For the Middle Ages must also be credited with the discovery or effective utilization of no less than three new sources of inorganic energy: wind, coal, and gunpowder. Unfortunately, the origin of these inventions remains obscure in each case. But it is, perhaps, not so very important for the economic historian to be able to decide whether the windmill was introduced to Europe from the East, where it was known in the tenth century, or whether it was invented independently by European man. The fact is that it was already widely used in England and northern France by the end of the twelfth, and the beginning of the thirteenth, century.¹⁹ Dependent

¹⁷ Usher, *Mechanical Inventions*, p. 123.

¹⁸ The greater regularity of water supply in northern Europe was partly offset, though, by a climatic disadvantage only rarely met with in the South: the freezing-over of water-courses during the winter, and the damage done to mills by drift-ice in the early spring.

¹⁹ Usher, *Mechanical Inventions*, pp. 128 ff.

as it was on an irregular and unpredictable flow of energy,²⁰ the wind-mill, although more powerful than the water-mill, was not fated to play a strategic role in economic history, except in regions such as the Low Countries, where climatic conditions were exceptionally favourable. But its contribution to the economic welfare of these regions can hardly be overrated. Neither the sluggish watercourses of Holland and the English fenlands, nor animal power, could have provided sufficient energy for the working of the numerous powerful pumps necessary to prevent these areas from being flooded. Their very existence depended on the utilization of wind power. Beyond that, the windmills provided energy for a variety of industrial pursuits, such as corn milling, fulling, paper-making, etc.²¹ The predominance of Dutch shipbuilding and merchant shipping in the seventeenth century was due, in no small measure, to the abundant supply of mechanical energy; their wind-driven saw-mills enabled the Hollanders to produce bottoms more cheaply than their competitors, and this despite notoriously high wages.²² In a sense, the low hills and mounds from which the sails of their windmills caught the sea breeze may be said to have been the foundation of the commercial empire of the Dutch nation.

The discovery that a certain kind of "black stone" could be ignited and used as a fuel seems to have been made some time in the twelfth century.²³ But this discovery, which, in the light of subsequent development, appears so tremendous, probably attracted very little attention at that time. Wood was still plentiful everywhere, and for centuries to come coal remained an inferior substitute, used only locally in the immediate vicinity of the outcrops, except where (as in the Liège and Tyne districts) water carriage enabled the new fuel to sell in distant markets at a price sufficiently low to overcome people's strong prejudice against the foul-smelling combustible. It was not before the second half of the sixteenth century that coal entered upon its first dynamic phase in economic history. The story of how "an early industrial revolution" in late-sixteenth and seventeenth-century England made substitution of coal for wood on a large scale imperative, has been told by Professor Nef, whose brilliant account is contained in this volume.²⁴

This addition of a new source of energy to man's supplies, while a substantial gain, yet remained for some time to come of only limited importance. For, while the chemical energy stored up in the molecules of the new fuel was capable of being converted into heat, a further and

²⁰ It was this unreliability of the wind which frequently caused windmills to be erected near old water-mills, each serving as an alternative for the other. See Bennett and Elton, *History of Corn Milling*, Vol. II, pp. 262 ff.

²¹ See Violet Barbour, "Dutch and English Merchant Shipping in the Seventeenth Century", *Economic History Review*, Vol. II (1930), No. 2, p. 274.

²² See Nef, *British Coal Industry*, Vol. I, pp. 2 ff.

²³ See below, pp. 291 ff.

more decisive step, the transformation of caloric into kinetic energy, was still a thing of the future. But even as a source of heat, coal could not at first be utilized universally. For its sulphurous impurities have a fatal tendency to combine with the metal in the smelting and refining of iron, and thus cause it to become brittle. For this reason the iron industry, the most voracious, perhaps, of all fuel consumers, long failed to benefit from the new mineral fuel, and remained dependent on the dwindling supplies of charcoal. It was not before the eighteenth-century inventions of Abraham Darby, Benjamin Huntsman, and Henry Cort²⁴ that coal could be effectively used in the making of iron and steel.

The invention of gunpowder as a propulsive force (as distinguished from its use as an incendiary mixture or an explosive) can no longer be ascribed to the Chinese.²⁵ It was a European discovery, apparently made shortly before A.D. 1325—not by Roger Bacon (who was aware of the explosive, but not of the propellant qualities of gunpowder), nor by that half-legendary German monk Berthold Schwartz, but by some unknown inventor. The discovery that a mixture of saltpetre, sulphur, and charcoal, if ignited, could drive missiles with great force over a distance was a momentous one, not only from the standpoint of military and political history, but also from a purely technical point of view. Somehow man had stumbled on a method of converting—outside the cells of living bodies, his own or those of his domestic animals—chemical into kinetic energy. But unfortunately, the sudden and violent release of this energy could be controlled only imperfectly until very recent times,²⁶ and thus its use remained confined, almost exclusively, to destructive rather than productive purposes. For a long time to come man's quest of new sources of motive power had to be undertaken in an entirely different direction.

A search for new prime movers does not appear to have been carried on intensively prior to the seventeenth century. Before that time there were only a few operations, capable of mechanization, whose consumption of kinetic energy was at all significant. Even some of the heavier work, such as flour milling or the operation of forge hammers, while it required substantial power over some period, could, in the absence of other prime movers, still be performed by man or beast. For work of that sort was in the nature of things intermittent, and did not call for a continuous flow of energy. Wherever water or wind was available, the location of the plant and the timing of its operation could, in most cases, easily be adjusted to the natural limitations of power supply.

²⁴ See Thomas Southcliff Ashton, *Iron and Steel in the Industrial Revolution* (Manchester, 1924).

²⁵ See Charles Oman, *A History of the Art of War in the Middle Ages* (2nd ed.; London, 1924), Vol. II, pp. 205 ff.

²⁶ An attempt, in 1680, to move a piston by exploding gunpowder in a cylinder (an early precursor of the internal-combustion engine) failed.

However, there was one operation—one that, with the growing depth of mines, was becoming increasingly important in the seventeenth century—whose power requirements were of a different nature. Pumping as a rule called not only for a relatively intensive application of power, but for continuous performance. Moreover, since the location of the pump was dictated by the nature of the task, man could only seldom be guided by considerations of power supply in his choice of site. In other words, pumping was in greater need of mechanization than many other operations, yet the only sources of inorganic kinetic energy known at the time—wind and water—were not always available when and where they were needed.

Ideally, the pump required a prime mover that was cheap (the use of animals, which had to be worked in relays, was expensive), reliable (wind-driven machinery could never be sure of its power supply), and independent of location (water power was not always within reach). Seventeenth-century inventors, drawing inspiration from the findings of contemporary science,²⁷ realized that steam power, applied either directly, or as an auxiliary in the utilization of atmospheric pressure, would meet all these requirements. The methods by which men like the second Marquis of Worcester, Thomas Savery, and Newcomen succeeded in harnessing atmospheric or steam pressure to raise water are of greater interest to the historian of technology than to the economist, and need not be recounted here. It must suffice to recall that effective utilization of this new source of energy dates from Newcomen's engine of 1712, and culminated in the invention and development of the steam engine by James Watt in the second half of the eighteenth century.

Viewed through the eyes of an engineer, Watt's steam engine was a vastly superior power producer compared to the atmospheric engine. Its fuel consumption, for the same power output, was only one-half, and even as low as one-third that of Newcomen's engine. But the business man, if faced with a decision between the two generators of power, was bound to look at them from a different point of view. His was a pricing problem. The mine or waterworks owner knew that, if he installed a steam engine to drive his pumps, he would not only have to cover the cost of the machine and its installation, but continue paying royalties to the firm of Watt & Boulton.²⁸ Now in the case of the Cornish tin and copper mines or the London waterworks, the fuel economy that could be achieved with the steam engine was important enough to warrant its adoption. But in the colliery districts, where coal was very cheap, the saving effected by the use of Watt's engine was negligible; coal mines, as a rule, had no economic incentive to substitute

²⁷ See Usher, *Mechanical Inventions*, pp. 293 ff.

²⁸ This annual rent was computed on the basis of the saving achieved by using the new Watt engine rather than the more wasteful Newcomen engine. See John Lord, *Capital and Steam-Power, 1750-1800* (London, 1923), p. 109.

the new steam for the old atmospheric engine.²⁹ Thus, as long as the steam engine remained what it had been designed for in its initial stage, a power engine for pumps, its market must needs continue to be strictly limited.

Watt and his partner, struggling as they were with grave financial difficulties, could not fail to realize this limitation imposed on their business. It is therefore not surprising that Watt should have applied himself to the problem of transforming the reciprocating motion of his engine into a rotary one. When he took out a patent for his solution, the "sun-and-planet motion", on October 25, 1781, a new era in the history of energy utilization may be said to have begun. Henceforth, steam was capable, not only of working pumps and blowing furnaces, but of turning the wheels of whatever mechanical devices the inventive genius of mankind had created in the past, or should succeed in evolving in times to come: cotton gins and combing engines, spinning machines and power looms, hammers and rollers, threshers and printing presses, and, most portentous perhaps of all, marine engines and locomotives. Man had finally found a universal prime mover. Aristotle's vision seemed to be coming true

Actually, the steam-powered machine, at any rate in its earlier phases, proved a harder taskmaster in many cases than ancient slave-owners or medieval seigneurs. The very fact that most of the mechanized equipment could be operated with a minimum of physical force tempted employers to substitute, wherever possible, the cheap and docile labour of women and children for male hands. Moreover, in many cases the expensive new machinery would pay its way only if worked continuously, or nearly so. Long working hours and night shifts therefore were common in the early factories. Some of these evils were mitigated or disappeared completely in the course of time, as equipment grew too heavy or too complicated to be tended by women and children, and as social legislation began to restrict the employment of females and minors, and regulate the hours of work. But one new feature of a productive process which henceforth was governed by the inexorable rhythm of the engine, was bound, for better or for worse, to become deeply imbedded in our industrial civilization—the regular working habits imposed by the machine. Work, in the machine age, was fast divested of the last vestiges of playfulness it had retained throughout human history. It is significant that the rhythmic songs which in times past had accompanied so many operations, died away, as their tunes were drowned by the drone and throb of the engines. Man was becoming deadly serious about his work: punctual, attentive, disciplined. Much of that work, while it required less physical exertion than similar tasks

²⁹ Boulton and Watt themselves, for the same reason, were not anxious to install engines at coal mines. See Lord, *Capital and Steam-Power*, p. 160.

in former times, yet had become monotonous and wearisome. Altogether, the age of steam was not one of unmixed blessings.

The economic historian, as he approaches the age of complex machinery, becomes painfully aware of his limitations. He cannot but own that technology, the science of the methods of production, is an indispensable key to the understanding of economic life. Yet a knowledge of modern engineering, sufficiently intimate to permit an appraisal of the subtle and all-pervading influence of technical change on man's ability to increase his material welfare, is not easily acquired.³⁰ As the pace of invention quickens, and specialization of equipment increases, the historian finds himself less and less well equipped to give a conspectus of economic life. Indeed it is doubtful whether even part of the story can yet be told coherently. Man has hardly had time to reflect on the direction of the current that is carrying him along. Within little more than a hundred years since the invention of the steam engine production and transportation have been revolutionized, time and again, by new methods of generating power. And while society is still busy adjusting its ways of work and leisure and, alas! its methods of waging war and wreaking destruction, to the internal-combustion engine and the electric motor, atomic fission promises to yield amounts of energy before which the powers of wind and water, of coal and oil must pale into insignificance. Will the weak hands of man be steady enough to wield this awful instrument? Aristotle, if told of the element Plutonium, would shudder, he would not fail to remind us that Pluto is not only the God of Wealth, but also the Lord of the Infernal Regions.

³⁰ A relatively elementary introduction to the technology of power generation and transmission may be found in Eugene C. Witwick's *The Development of Power* (Chicago, 1939). Much spadework, however, remains to be done in order to reveal the ramifications of technical and economic interdependence. The nature of the problem may be illustrated by referring to the vast increase in the consumption of coal to which the introduction of steam power has given rise. The fuelling of the new engines alone would have required large additional quantities of coal. But the indirect effects of the new prime mover on coal consumption were perhaps even more far-reaching. Steam engines and steam-powered equipment, if they were to withstand the heavy strain of rapid motion, must needs be constructed of iron or steel, the smelting and refining of which required veritable mountains of coal. As the consumption of coal and iron increased, more steam engines were needed in turn to pump the water out of the deepening mines, to create the blast in the furnaces and forges, to transport the coal to the places of consumption, etc. And so more coal had to be mined again—a snowball of increased consumption which is clearly reflected in the steeply rising curve of British coal output in the nineteenth century. See W. Stanley Jevons, *The Coal Question* (London, 1865).

MARC BLOCH

The Rise of Dependent Cultivation
and Seigniorial Institutions

*From THE CAMBRIDGE ECONOMIC HISTORY, Volume I,
Chapter VI, Pages 224-277. Cambridge: UNIVERSITY PRESS,
1941.*

The Rise of Dependent Cultivation and Seigniorial Institutions

I. *The problem*

Our object being to inquire into the origins of the rural *seigneurie* in Western and Central Europe, our first task must necessarily be to form as clear an idea as possible of what it was like when fully developed. You cannot study embryology if you do not understand the grown animal.

The seigniorial system, or to use the name under which it is known in England, the manorial system, was not based on slavery in the true sense of that word. Whatever their legal status may have been, even if it went by the name of serfdom, the peasants who composed a *seigneurie* were in no sense human livestock, fed by their master and owing the whole of their labour to him. They lived on the produce of fields that they cultivated on their own account, which were usually handed down from father to son; and if the opportunity occurred they could sell or exchange the produce in order to procure other necessaries of life. They usually formed little rural communities with a strong *esprit de corps*, exercising common rights over waste land where their flocks could graze and they could gather food, able to regulate the arable land itself in the common interest with a jealous insistence. But they did not work only for themselves, or for Church and Ruler: a great part of their toil went towards the maintenance of one who stood immediately above them.

To this lord, as they called him, the cultivators of the soil owed, first, a more or less important part of their time; days of agricultural labour devoted to the cultivation of the fields, meadows, or vineyards of his demesne; carting and carrying services, and sometimes service as builders or craftsmen. Further, they were obliged to divert to his use a considerable part of their own harvests, sometimes in the form of rents in kind and sometimes by means of taxes in money, the preliminary exchange of produce for money being in this case their affair. The very fields that they cultivated were not held to be theirs in full ownership, nor was their community—at least in most cases—the full owner of those lands over which common rights were exercised. Both were said to be ‘held’ of the lord which meant that as landowner he had a superior right over them, recognised by dues owed to him, and capable in certain circumstances of overriding the concurrent rights of the individual cultivators and of the community.

Finally, the lord did not merely draw from his peasants valuable revenues and an equally valuable labour force. Not only was he a *rentier* of the soil and a beneficiary of the services; he was also a judge, often—if he did his duty—a protector, and always a chief, whom, apart from any more binding and more personal tie, those who ‘held’ their land from him or lived on his land were bound, by a very general but very real obligation, to help and to obey. Thus the *seigneurie* was not simply an economic enterprise by which profits accumulated in a strong man’s hands. It was also a unit of authority, in the widest sense of the word; for the powers of the chief were not confined, as in principle they are in our capitalist enterprises, to work done on his ‘business premises’, but affected a man’s whole life and acted concurrently with, or even in place of, the power of the state and the family. Like all highly organised social cells the *seigneurie* had its own law, as a rule customary, which determined the relations of the subject with the lord and defined precisely the limits of the little group on which these traditional rules were binding.

For more than a thousand years the *seigneurie* as thus defined was one of the dominant institutions of Western civilisation. Firmly established already in many lands at the dawn of the Middle Ages, its reign over the European countryside came to an end only in times which historians, accustomed to reckon in centuries, would describe without hesitation as recent. Although it was overthrown, while still in full working order, by the French Revolution in 1789 and 1792, it finally came to an end in Central Europe only as a result of the democratic movement of 1848. England, with still greater respect for the past, waited until 1 January 1926 before removing the last ‘manorial incidents’ from her law; though it is true that for very many years they had been little more than empty legal survivals. In the course of such a long existence the institution of the *seigneurie*, which had always differed in character from place to place, inevitably underwent many and often very profound transformations. One feature might disappear while another became more accentuated. From the close of the Middle Ages, for example, services may be seen giving way almost completely to dues in money or in kind throughout Western Europe and Italy; while in Eastern Germany the demesne swallows up most of the dependent peasant holdings, and their tenants are brutally depressed to the level of a wretched rural proletariat. In England the governmental aspect of the manor gradually loses a great part of its legal force, henceforth being only enshrined in social habits or merged in the political domination of a class; the squirearchy, in short, emerges slowly out of manorial lordship. But in what science has the presence of variations or varieties ever interfered with the recognition of a genus? The fundamental features here recalled define accurately a clear and distinct type of social structure, which had great resisting force and by which through the centuries man’s destiny has been so powerfully in-

fluenced that even to-day, in every country on which it left its mark, the divisions of property, the distribution of rural dwellings, the countryman's habits of mind, can only be explained by reference to its ancient and now abolished authority.

It must be admitted that the genesis of this institution which has held so great a place in European history remains singularly obscure. Because the documents are few and for the most part late. Also because they are terribly scattered, in time and still more in place. In Gaul, Italy, the Rhineland, they scarcely allow us to form any distinct picture of the *seigneurie* earlier than the ninth century—and then it was unquestionably very old. For England we must come down almost to the Norman Conquest. Before the great descriptions to be found in the Carolingian surveys or in that of William the Conqueror, we must do as best we can with a few most fragmentary scraps of evidence, or the indirect witness of archaeology, place-name study, or the study of the meanings of words. It is needless to say how little we know of German society before the great invasions. Perhaps we are not always fully aware of our desperate ignorance of the fundamental structure of whole sections of the Roman world, and in particular of Eastern Europe, in imperial times. No doubt we have the fine inscriptions from African estates; and further East, preserved by the fortunate drought of a desert climate, the invaluable archives of so many great Egyptian estates, from the time of the Ptolemies downwards. But is it possible to believe that a few centuries of a common political domination can have sufficed to obliterate the diversities between societies so different in their conditions of life and historical traditions as those of the Nile Valley, Berber Africa, and Gaul? And the picture that might be composed by lines taken in turn from a village of the Fayyum under the Lagides, from an imperial *saltus* on the high plateaus of Algeria, and lastly from a monastic *fisc* of Charlemagne's Île de France—would there be any real chance that this would express a genuine continuity? No doubt Egyptian and African evidence can throw precious light on the origins of the western *seigneurie*. But only if we ask of them what they can legitimately supply. That is information, not about the actual thing that we are studying, but about analogous things. In short, we must treat them as documents of comparative history.

And it is on comparative methods that we must mainly rely. On comparisons of the European development with parallel developments that may be studied outside Europe? No doubt. But also, and perhaps mainly, on systematically conducted comparisons of the various regional developments within European civilisation itself. For the establishment of the seigniorial system was not carried through in all of them at the same date nor with the same rhythm; nor was it everywhere equally complete. These divergences and these imperfections are of the nature of experiments, to which special attention should be given in causal analysis. Unhappily, inquiry in this direction has not hitherto been so persistent as could be

wished. Confined to their special provinces, scholars have not as a rule posed their questions widely enough to bring the diversities clearly into the light. So true is this that, in this capital matter, we are dealing not with settled conclusions but with an inquiry that is still proceeding.

These considerations determine at once the limits to our ambitions and the method of the inquiry. To state the main problems with all possible precision, to suggest cautiously some working hypotheses—modest as these achievements may seem, the historian of seigniorial origins to-day should not aim at anything more striking. Moreover he cannot follow strict chronological order. He might as well try to follow a track by night. He must start from what is least imperfectly known, collecting one by one various indications which may help him to understand a more remote and more obscure past. Such a method of exposition must necessarily be rather slow, and very unlike that appropriate to questions that have been more completely answered. At least it will follow faithfully the actual lines of research; and perhaps, after all, one may interest a reader best by describing to him how one groped for truth in the laboratory.

II. *Seigniorial types of the early Middle Ages*

We are still far from the possibility of constructing a map of the 'seigniorialisation' of Europe; but we may at least try to distinguish roughly the principal areas which such a map, could it be completed, would mark out with a precision that to-day is out of the question. First, we discern a vast area throughout which the *seigneurie* was firmly established in the ninth century, and no doubt had been long before that; where for many centuries it influenced the whole of social life profoundly—most of Italy; North-Eastern and South-Eastern Gaul, with its Catalan and Rhenish promontories; and even beyond the Rhine great regions of Southern and Central Germany. Secondly, a region of late but marked 'seigniorialisation'. England is its chief constituent area, but probably we ought to add, though with a still later start and a much less vigorous growth, Denmark. Then come the regions of incomplete 'seigniorialisation'—South-West Gaul, the Saxon plain. Last, the lands that have no *seigneurie*—Friesland, Dithmarschen, Norway, perhaps Sweden. It will be simplest to begin our search in the first area and, more particularly in Gaul, because of the greater abundance of sources. And naturally we shall go back as far as we can with any confidence, that is, as we have already said, to early Carolingian times.

It must not be forgotten that even for Carolingian Gaul our knowledge is very fragmentary. We know much about only one class of *seigneuries*. They are found in the region of big villages north of the Loire, and are themselves unusually big. Those that can most easily be described belonged to monasteries. But we know enough of the royal estates to be able to

say that, in their main lines, they hardly differed from the ecclesiastical; and as these last had come to the Church by gifts, sometimes made only a few years before the documents provide us with a detailed account of what had been given, we are entitled to hold that the general lines of the picture apply equally to the estates of the great lay aristocracy at that time and place. This is the type from which our inquiry must necessarily start: later we may extend it to other types.

Seigneuries of this type were distinguished by the union, and that extremely close, of a very great area cultivated directly by the lord—the demesne, or as it was usually called, the *mansus indominicatus*—with little dependent peasant holdings which, following a rather later usage, we shall call the ‘tenancies’ (*tenures*).

The management of the demesne radiates from a group of buildings—dwellings, barns, cattle sheds, workshops—sometimes fortified, and known as the court; *curris*, that is the enclosure. Around it lie gardens, ploughlands, vineyards, meadows. As a rule the *mansus indominicatus* also includes forest land, often very extensive, and grazing lands. But since they are generally subject to rights of user by the community, these stretches of woodland and waste are not so completely at the lord’s disposal as the other parts of the demesne, for the moment let us leave them on one side. Even when limited to its cultivated fields and meadows, the *manse domania* remains very great. Its area will regularly be one third, one half, or sometimes almost even the equivalent, of that of the similar lands held by the body of peasants. So two very grave problems faced the lord. A ‘marketing’ problem; how to make the best use of the produce of this extensive agricultural enterprise. A ‘labour’ problem; how to find hands enough to keep it going. Turn for the moment to the second.

Wage labour proper was not of much account. It was not unknown; but it was only called in now and then, for those great seasonal operations in which men volunteered to work for hire. On the other hand, on most demesnes there still lived some slaves who, being fed by their master, worked always under his orders; they were called his *provendiers*, because they got their *provende* (*praebenda*) from him. The surveys (*censiers*), whose main object was to determine the relation of the lord with his tenants, as a rule pay very little attention to this servile personnel of the court; the description of the estates of Saint Germain-des-Prés mentions them only once and then quite incidentally.¹ But we have nevertheless enough textual references to justify us in counting the slaves as a normal element of nearly every *seigneurie*. What we should most like to know would be their numbers. Unfortunately we seldom can. But everything suggests that they were small, at least in relation to the size of the huge fields of the demesne. There were exceptions no doubt. But the exceptions were not due so much to a great abundance of slaves as to the existence here and

¹ xxv. 8: *fimina de fisco dominico*.

there of small demesnes. Thus in A.D. 862, on the 'royal manor' of Ingolstadt, the twenty-two slaves of both sexes attached to the court might themselves have done nearly all the work needed to cultivate fields then limited to about 110 acres.² The case—it has no parallel in Gaul—is worth quotation, because it illustrates excellently the extreme variety of seigniorial types, due in great part to the survival of ancient arrangements. It was without doubt an exceedingly rare case, especially among royal estates. On the majority of *seigneuries* in Carolingian Gaul the situation must have been much more like that on those Italian *seigneuries* which happen to have left to us rather more precise information, and where we see, for example, in the ninth century, on a Farfa estate, a group of only ninety-three fed slaves against one of more than 1400 tenants. Early in the tenth century, on the immense estates of Santa Giulia of Brescia, we find, it is true, an appreciably higher proportion; but still only 741 against nearly 4000. And the reckoning includes the relatively large group of strictly domestic slaves. The very modest gangs of agricultural workers which slavery thus provided, though useful because they were always at hand on their master's farm, were obviously incapable of meeting the needs of those great employers, the aristocracy, the King and the Church. These had to look in a very different direction for their principal labour supply.

The 'tenancies' furnished it, in the form of the compulsory services of their holders. Each tenant, as a rule, had assigned to him some of his master's fields, to be tilled for the master. But this ingenious form of piece-work could be applied only to a relatively small fraction of the demesne. The rest was cultivated by means of labour services, applied either to carting or to the numerous and varied daily jobs of any agricultural undertaking. Periodically the peasants were called together, often bringing their teams, by the directors of the *seigneurie*, and despatched to do whatever was required at the moment. These services, usually occupying several days in the week, were immensely burdensome to the peasant, much more so, as things then were, than the various dues supplementary to them; but without them the central undertaking could not have flourished, nor even carried on. Had the little peasant holdings been vacated, the lord's barns would have emptied and his fields lain fallow.

The first striking fact about the organisation of these *tenures* is its regularity. The greater part of the soil held from the lord was split up into units, in theory indivisible, called *manses*. These in turn are arranged into groups, and each member of each group bears approximately the same burden. Postponing the problem of the *manse*, let us consider the principles which determined the classification of these master-cells of the seigniorial organism.

² *Mon. Germ. Diplomata regum e stirpe Karolinorum*, vol. i, *Ludowici Germanicae Dipl.* no. 30.

There were two main groups of *manses*, those called servile and those called free. They were not necessarily found side by side on every *seigneurie*. But most *seigneuries*, especially the greater ones, contained both sorts. Three marked characteristics distinguished the two groups. Usually less numerous on any given *seigneurie* than the free *manses*, all told the servile *manses* were certainly much fewer; on the lands of Saint Germain-des-Prés, as known to us from the early ninth-century survey, there were only 191 servile against 1430 free; on those of the Bishop of Augsburg, at about the same date, there were 421 against 1004. The servile *manses* are also regularly smaller than the free *manses* of the same *seigneurie*. Lastly, they have different burdens, heavier and—when services—more indefinite. More subject to the master's arbitrary power, in this and many other features such as exemption from military requisitions—that honourable obligation of free men—they recall the lowly status of slavery. So do the names of the two groups. In the beginning, the servile *manse* had been the holding of a slave—but of a slave settled on the soil, turned into a farmer, and consequently far removed in his daily way of life from his colleague the fed slave (*provendier*); the free *manse* had been the holding of a free man.

However, by the ninth century, this antithesis no longer agreed strictly with the facts. No doubt the burdens originally laid on the soil remained. Besides, the doctrine, if not always very precisely the practice, of personal law still distinguished—according to the old standards—the slave landholder from the free, who was generally called a *colonus*. But it did not follow that the soil and the man were always in the same class. Plenty of *coloni* held servile *manses*. Still more peculiar—for these free holders of land once stigmatised as servile may well be freedmen, or their descendants—free *manses* might be held by slaves. This anomaly struck and worried contemporaries just as it does us. That is why some surveys, while still keeping the two traditional categories apart, chose terms to describe them which, neglecting all legal standards, were based simply on differences of obligations. By a significant vacillation, the compiler of the '*polyptyque*' of Saint Maur-des-Fossés sometimes wrote 'servile *manses*' and 'free *manses*', sometimes—and even when referring to the very same holdings—'*manses* which owe manual services' and '*manses* which owe team services'. Later, the distinction was to disappear altogether from the vocabulary of surveys.

It is then perfectly clear that the antithesis of these two sorts of tenure originated at an appreciably earlier stage of social evolution, although for lack of sources we can only trace it in an era of decline. It opposed to one another two elements in the seigniorial structure, which in fact were being steadily welded together—two sedimentary strata of which no one could state a priori that they had been laid down at the same stage of development, or under the influence of similar conditions. Here is a formidable problem for research; but before tackling it it will be

well to complete our bird's eye view of the field of early 'seigniorialisation'.

Although a legal entity and, as such, incapable of division, the *manse*—in regions of nucleated villages—was only very seldom in fact a single undivided stretch of land. It was usually made up of many strips scattered over a much divided soil. The demesne itself was made up as a rule of various fragments, usually bigger than those of the peasants, but more or less mixed up with them. The tenants' houses were in the village, round about the court; so that the rural scene itself reflected the interdependence of the constituent parts of the *seigneurie*, and greatly facilitated the working of the system, by placing the man who owed services near the place where they were needed. But we must make no mistake; there was no exact correspondence between village territory and *seigneurie*, though sometimes they did correspond. Even neglecting for the moment any completely independent peasant holdings that might survive among those that were dependent on some lord, many a village had several lords, and even in regions where settlement was highly concentrated a *seigneurie* might include *manses* scattered over the fields of several villages, sometimes relatively remote from the centre; so much so that, as is seen in the Montierender survey, some of the lord's men made a longish journey before reaching the demesne on which they had to work. Elsewhere, it became necessary to abandon the services due from *tenures* which were too remote.

And there existed already, in the Gaul of those days as in contemporary France, vast regions where men lived not in villages but scattered in smaller groups. There the *manse* was a single block of land or nearly that. About the house of the *masoyer* (*mansuarus*) were grouped his lands, generally very extensive, for—since we are here dealing with regions of poor soil—they were only tilled intermittently, harvests alternating rather capriciously with fallow on the same plot. So constituted, and inhabited as a rule by one or two good-sized families of the patriarchal type, the *manse* lay sometimes quite by itself. Elsewhere, with a few others, it formed a tiny hamlet. Obviously such a scattering of the rural population was inimical to collaboration between demesne and tenancies. It presented awkward practical problems, of which various sections of the survey of Saint Germain-des-Prés relating to the woodlands of the West give us a clear notion. There being no big village to serve as the unit of administration, each 'estate' included a large area covered with a loose network of dependent *manses*. Although it existed, the demesne strikes us as uncommonly small when compared with other geographical regions: only 10% of the cultivated area at Boissy-en-Drouais; 11.5% at Villemeult; whereas about Paris it touched more than 32% at Villeneuve-Saint-Georges and more than 35% at Palaiseau. If a *mansi* *indominicatus* in the woodland country was given to monks,

they might be obliged to turn it into tenancies, because they could not conveniently make direct use of it.

But it must be clearly borne in mind that these difficulties were mainly those of the great *seigneuries*, themselves integral parts of landed properties both huge and widespread. Always difficult for the administration, because it was necessary to divide the produce into two parts—one to be disposed of on the spot without too much loss, the other to be dispatched to a single and often rather distant point of consumption, the monastery—properties of this class became still more awkward to manage, when to the distance between the various units of administration was added, within those units, too great distances between each tenancy or each field of the demesne. These conditions were much less unfavourable to little lords who lived on the spot. Consider the *seigneurie* of Ebon and Eremberge, right in the woodlands of the Corbonnais, which they gave to the monks of Saint Germain-des-Prés, to receive it back from them, by the way, perceptibly increased, as a *precarium*, that is in return for a rent in money. It is of no great size—about 120 acres of arable and 48 of meadow; whereas monastic *seigneuries* usually reckoned several hundreds, even thousands, of acres. But it is made up of a *mansus indominicatus* and nine tenancies, so divided that the demesne covered rather more than 34% of the arable and about 57% of the meadowland, which naturally meant heavy services for the tenants, services which in this case were at the lord's discretion. So it reproduces at every point, only on a much smaller scale, the structure of that classical *seigneurie* of which a *fisc* of the Church or of the King provides the giant type. People so modest as Ebon and Eremberge were not able to compile fine surveys. That is why our sources do not tell us much about these little rustic lordships. But they emerge here and there, through some lucky documentary reference, made up, according to the nature of local settlement, now of a fraction of a village, now of a hamlet or even of some scattered *manses*. Perhaps, all things considered, they were the most numerous kind of *seigneurie* to be found on western soil. Their internal constitution does not seem to have differed much from that of their bigger sisters; and they could adjust themselves easily enough to any type of settlement.

In its essential features, which are all that matter here, the picture of the *seigneurie* just sketched for Carolingian Gaul would be correct, almost line by line, for Southern and Central Germany and for Italy, about the same date. But for Italy there is a weighty reservation.

North of the Alps, contractual relations between individuals played an insignificant part in the inner life of a *seigneurie*. In spite of their looseness, which itself indicates a legal habit of mind very different from ours, the texts give a very clear impression that the relations between the master and the little cultivators were determined more often than not by custom alone, a custom the same for all the group, or at least for all *manses* of the same class. Exceptions there doubtless were. The agree-

ments for protection, of which we shall speak later, usually went with a grant of land. Often enough the generosity of the lord was, in truth, only apparent; he was merely giving back some property which his client had previously surrendered to him, now burdened with fresh obligations; and the game of surrender and regrant simply transformed a holding formerly autonomous into one under authority. But the question whether the grant was real or nominal did not change its profound significance; in either event it ended by creating a tenure which we may say was rooted in contract. With this limitation however that, although it was the product of two acts of will, the agreement had no sense save as part of a vast system of custom. Agreements of this type are as a rule singularly vague; they do not determine exactly either the liabilities of the land or, what is still more curious, for how long the recipient is to hold it. That is because they tacitly assume the local custom; and the customary rule as to the second point was almost invariably that of heredity. There can really be no doubt that, whether by tradition or by sufferance, tenancy normally went from father to son. True, some manses—regularly described as *censiles*—were actually let for terms of years. But they are very rarely found.

As for the *precarium* contract, also a kind of letting for a limited period, its range under the Carolingians was confined almost exclusively to persons in rather high places and to estates very far removed from those of peasants; though at an earlier date it may have been wider. It was in regular use between the religious houses and the lay aristocracy, whose members found in this legal procedure an easy way of snatching *seigneuries* or parts of *seigneuries* from the Church, while nominally only renting them. It is very rarely met with in the relations between the lords and their men. Custom, on which they were based, gave its own perpetuity to the rights over land of the majority of these dependent folk.

Now Italian conditions contrast with these in two marked ways. Not only did a great number of Italian peasants hold lands burdened with dues and services to a lord by a regular contract (the *livello*). This contract, further, gave them a tenure limited in time, either to one or more lives, or—and more usually—to twenty-nine years, so as to avoid the prescriptive rights which went with a thirty-year tenure. It is in fact highly probable that more often than not the lease was renewed at the expiry of the fixed period. Some deeds even anticipate this renewal and fix the price that is to be paid for it. The practical reasons which everywhere favoured heredity were at work in Italy as in other countries: labour was so rare that what a lord most feared was its loss. Yet such a tenure was none the less by definition temporary, and rested on a contract explicitly formulated at each renewal. The contrast so revealed between the societies north and south of the Alps is a structural difference which must always be borne in mind.

III. *The decline of slavery*

In the description just attempted, one fact above all claims attention. It is not enough to say of the ninth-century *seigneurie* that it contained only a few slaves housed and fed on the demesne. The institution itself, its fundamental principles, assumed a society in which really servile labour played only an unimportant part. If there had been plenty of slaves for sale, and their work had covered their cost, why exact so many services from your tenants? And as the burden of dues was necessarily in inverse relation to that of services, would not good sense suggest taking from the *manses* more of the crops and fewer days' work? But that is not all. Itself the antithesis of a slave system, the *seigneurie* had grown up precisely when such a system was on the decline. On this falling curve of slavery the ninth century marks only a point, but a point in fact very near the end.

No doubt we must not exaggerate, even for the Roman world, the position held by vast *latifundia*, tilled by gangs of slaves, sometimes in irons. The existence of a numerous free peasantry—who might all the same be under the domination of magnates or chieftains—is proved by indisputable records; and, as we shall see, it was on this basis that the *seigneurie* itself was in great measure built up. Yet it is nevertheless true that round about A.D.1 slavery was very widespread in the Empire; that the rich in particular had at their disposal great troops of slave labourers whom they employed, not only in domestic work and handicrafts but also in agricultural work; that especially on great estates, apart from some paid labourers hired in times of pressure or for specialised tasks, the work was done almost exclusively by slaves. Even in Germany, slaves, though no doubt many fewer, were found in all comfortable homes; at the time of the invasions the chieftains brought slaves of their own race into *Romania*; in raiding there they got plenty more. At the start of the Merovingian era, Gregory of Tours and the contemporary lives of the Saints, with the letters of Gregory the Great for Italy, give us a quite clear impression of a society in which the slave is still a very familiar type; in which you sell in the markets of the Frankish Kingdom captives from Italy; at Naples captives got by raids from Gaul; in which women slaves grind at the mill in the lord's court and slave shepherds tend the flocks. Two or three centuries after the age of the great Carolingian surveys, in which already the importance of slavery had dwindled so much, it played only an insignificant role in the greater part of the West, and a role exclusively domestic.

The decline of slavery is incontestably one of the most notable facts in our western history. Like all great facts, it is hard to explain. Broadly one may say that three groups of causes, converging, brought it about—the military, the religious, and the economic.

Servile labour, as the men of the ancient world were well aware, almost always gives a wretched return; many hands to finish off few jobs, that is apparently its motto. The slave is a form of capital with modest yield, the more modest because you must deduct from his output the cost of his keep. He is, besides, a fragile form. If he is sick he has no output, but the costs of his keep run on. If he dies—and his life was often short, especially if he were enrolled in the great teams of the *latifundia*, where living conditions were necessarily very harsh—or if he runs away, so does the capital invested in him. Was it not Varro who, for this reason, advised employers to prefer, in unhealthy posts, free wage-earners whose death would cost them nothing? All this has little importance so long as the slave can be replaced cheaply. If he cannot, losses may swallow up profits. Now the birthrate on a slave estate is hardly ever high enough for the regular maintenance of a herd of slaves. Experience has proved it: of all forms of breeding, that of human cattle is one of the hardest. If slavery is to pay when applied to large-scale enterprises, there must be plenty of cheap human flesh on the market. You can only get it by war or slave-raiding. So a society can hardly base much of its economy on domesticated human beings unless it has at hand feebler societies to defeat or to raid. That was the position of the white men of the West Indies towards black Africa from the sixteenth to the nineteenth century; of Abyssinia yesterday, surrounded by primitive and ill-armed tribes; of old Rome in her days of conquest. The legions had supplied huge labour battalions, who toiled in the field or on the public works under the lash or the threat of the *ergastulum*. The relative peace of the first two centuries of our era appears to have made their recruitment appreciably harder. New methods then began to appear in the administration of the *latifundia*, to which we shall refer shortly. Evidently the return to an almost chronic state of war, with the repeated attacks of Persians and barbarians, produced subsequently some revival of the slave trade, in spite of Rome's military decadence. The great invasions at the end of the fourth and the beginning of the fifth century led to a further revival. And it was not only the invaders who made money by slave dealing: anyone rich enough could seize the opportunity. The records show that when the Germans had ravaged a country they sold their prisoners readily in *Romania* itself. But all this meant only a temporary rise in the general downward movement of the curve of slavery.

At first sight it may seem astonishing that the very warlike Middle Ages had so few slaves. Here religious considerations intervened. Not that Christianity proscribed slavery as such. At least the prevalent form of Christian doctrine that soon became official did not. As between those extremists who were not afraid to teach the slave to despise his master and even run away from him and the Council of Gangra which excommunicated them in A.D. 324, the future lay with the Fathers of the Council. Like the great philosophies of antiquity, Christian ethics as

ordinarily received made it the master's duty to treat his slaves well, because they were his brothers in Christ; but according to St Paul it was also the slave's duty to obey his master. A deliberate supporter of the established order of society, the Church was profoundly indifferent to all plans for reforming this world below, so negligible in its eyes compared with the City of God: 'Christ,' Primasius of Hadrumetum writes, 'came to change men's hearts, not their conditions of life.' A structure of ideas, in which it is not difficult to recognise the use of some devised by pagan wisdom, helped to support the conclusion. Slavery was no doubt opposed to the Law of God (the philosophers had said, to the Law of Nature). So, for that matter, was property. But both institutions sprang from the Law of Nations, to which, ever since the Fall, mankind ought to submit as to a necessary evil and a well-deserved punishment. No doubt the freeing of slaves was an act of piety; and it is not impossible that the desire to win salvation may have had something to do with the numerous manumissions during the first centuries of the Middle Ages. But we shall see that other, and much more earthly, causes contributed at least as effectively to the great momentum of emancipation. It was never a sin to have slaves, even to have Christian slaves. When a slave born in paganism was baptised the Church rejoiced. She never required the new convert to be set free; rather she hoped that, by faithful service, much better than that of his comrades who remained in sin, he would show to his master the loveliness of true religion.

On the other hand, the Church refused resolutely to sanctify the enslavement of Christians, true Christians, that is Catholics. By so doing she merely extended, but so widely as to alter its whole character, a rule that had come down from the most remote past of pre-Christian civilisations. The slave had always been, before all else, a captive: beyond the little territory of the tribe or the city stretched a vast region peopled with men who had no rights at all. You could seize them as and when you wished. Now the new religion had replaced the tiny pagan city by the immense city of the spirit, to which all Christians belonged. Outside this *societas christiana* you might still treat men as cattle, and if you took them prisoners keep them as slaves. But if a Christian captured another Christian he was obliged to respect his free status. Perhaps one of the finest triumphs of Christian ethics was the enforcement of respect for this maxim, slowly to be sure, for it is still being recalled in England early in the eleventh century, but in the long run most effectively. So it came about that the perpetual wars among Catholics left numberless dead; prisoners who sometimes sighed their lives out in dungeons—it was William the Conqueror's principle that they should; but, after the age of the great invasions, hardly any slaves. Yet you could hunt for slaves in the countries round about; Celtic Christians of the far West, generally treated as heretics; Islam; Slavonic, Baltic or Finnish 'paganries'; and even, from the eleventh century, Greek Christ-

ians who by that time were all but cut off from the Catholic world. But these were all distant lands, or lands difficult of approach. They could supply warriors or traders with a few slaves; they could not maintain a great servile economy.

Still that does not explain everything. In the Roman world itself, the division of *latifundia* into small farms can be clearly traced from the second and third centuries; eras, no doubt, in which human merchandise was becoming more rare, but in which the supply was far from exhausted. Later, during the early Middle Ages, the tenurial system managed to establish itself, although in fact the existing servile population, if it had been employed in the old fashion, might have been exceedingly useful, and although the slave trade itself was far from extinct in the West. Setting out from the frontiers of the Slavs, or from Britain, slave caravans guided by slave-traders still traversed Germany and France in the tenth and eleventh centuries; but it was to reach ports from which the goods could be shipped to Byzantium or, more often, to Mohammedan Spain. The captives kidnapped beyond the Elbe, when they were not in this way disposed of outside Western Christendom, were used—even in Germany—much oftener as tenants for the waste spaces of a *seigneurie* than as domestic slaves in the lord's court. Even the revival of seaborne trade, from the twelfth century, which put on to the Mediterranean markets a much greater supply of wretched creatures, kidnapped in North Africa, the Levant, or on the shores of the Black Sea, though it filled rich establishments with domestics and concubines, and added a few slave farm hands, did little more—except perhaps in the Balearic Islands and in Sicily.⁶ Obviously the working of great estates by slave labour was no longer considered possible or desirable. The grouping about a central establishment of dependent holdings, saddled with dues and services, was preferred. That was because the control of a great rural establishment based on slavery raises very delicate problems of administration, which can only be solved with success in a particular economic and mental environment. The maintenance of great masses of human beings must be provided for without using up all the produce of the soil on their keep—or any of the most profitable produce. With part of the income—but never at any time the whole—men must be bought continuously to maintain the stock of labour. In short, an economy must be kept going—on a large scale and with intelligence—based on exchange and profit, an economy which the conditions of life and the growing scarcity of ready money ever since the later years of the Empire made it a less and less simple matter to organise. It is easy to follow, in the letters of Gregory the Great, the parallel progress of a sort of economic debility—revealed at one time by grave difficulties in the commissariat, at another by the abandonment of great cattle-breeding enterprises—and of the replacement of troops of slaves by tenants. Slave labour requires close oversight: long ago Columella had recommended the system of small farms on parts of

the estate too remote for frequent visits by the *pater familias*. Now an aristocracy of men who were primarily soldiers was singularly ill fitted for that kind of oversight. And its retainers, fighting men and little else, could not give much help. As for the monks, they ought to be spared every kind of work which would distract them from prayer, liturgy, and the practice of asceticism. Lastly, estate management requires careful account keeping; a thing which became more and more difficult for average administrators, in the ignorance and disorder which the great distress of the opening Middle Ages brought with it. The repeated, and almost puerile, instructions which abound in the estate ordinances of the ninth century—in Charlemagne's *Capitulare de villis* or the statutes of Abbot Alard of Corbie—show us how hard it was for the great men to make their subordinates apply the most elementary rules of book-keeping. To adopt tenancy as a solution was the line of least resistance. Labour kept itself; the families, each settled on its scrap of land, grew in the natural way. It was merely necessary to take care that the days of work on the demesne were duly given—and that was mostly done for you by custom. As soon as slaves, at the places of sale, were no longer a commodity attractive because abundant, and therefore cheap, the new tone of social life and the new habits of mind were all against any effort to maintain the old, and far too complicated, methods.

The evolution which had affected the slaves in this way would be reproduced, rather later, almost feature by feature, under the operation of the same causes, in the case of the vassals. They had originally been a fighting *comitatus* and they had fed in their chieftain's hall. Gradually it was thought more convenient to give each of them an estate on which he and his family could live. It was assumed that he would still perform his old duty, just as the slave—now liable to render services—went on working on the demesne. But the vassals' duties were of quite a different sort—instead of humble agricultural labour, military service, attendance at the lord's court, 'counsel'. Moreover the fief which owed them was not a peasant holding; it was as a rule itself a *seigneurie*, large or small. These are weighty differences, they led to absolutely opposite social classifications. But viewed from the economic angle, the positions of the two classes are fundamentally similar. Under the early Norman kings, many an English abbey, after having tried to keep armed knights about the place and feed them at its own expense, had to make up its mind to assign fiefs to them, cut out of the monastic lands. Whether you liked it or not, the social environment, from top to bottom of the social scale, was against the 'prebend', the system of maintenance on the premises.

In fact, the troops of slaves who had once lived on the great estates dwindled away from year to year mainly because their masters were always turning them into tenants, 'hutting' them as the phrase was; giving each his own hut (*casa*), of course with the necessary fields.

Evidently this reduced the land which the lord had formerly cultivated himself. Huge as they seem to us, the *mansi indominicata* of the ninth century must have been appreciably smaller than the *latifundia* which had preceded them. Sometimes the slave, now turned into a farmer, was freed at the same time. But often he remained legally in slavery. There had always been some grants of land to slaves. But in the time of Varro, Cicero's contemporary, they were not usually given regular holdings—just scraps of land big enough to carry a few cattle, as rewards for good service. In the first century Tacitus found, or thought he found, slaves with their own *penates* in Germany; and he marked the contrast with Roman usage. (Perhaps what he really found were not true slaves, but that superior grade of dependents, conquered folk or freed men, whom the Germans called *laeti: lidi*.) Clearly, the practice spread shortly after his time. Jurists writing about A.D. 200 treat it as normal. It went on spreading in the following period. Imperial policy helped to strengthen it. As we shall see, the government, anxious both to keep up the yield of the land and to facilitate tax-collecting, had decided under Constantine that the freeborn farmers, the *coloni*, ought to remain on their farms from generation to generation the lessors might not evict them. If its plan was not to miscarry, government could not overlook the now important group of *servi casati*. Already in 367-75 a law, which refers expressly to the policy previously adopted towards the *coloni*, absolutely forbade the sale of 'rural slaves, whose names were on the tax-rolls', without their land. That, it is true, only prevented the master from making easy money out of his slaves by selling them apart from the soil to which they were henceforward bound. Inside the servile group, thus tied to a given area, he could do as he liked. But apparently he was deprived later of a right which, it might have been thought, was of the essence of property in slaves—that of diverting the personnel of the 'tenancies' to other tasks. We have lost the relevant evidence: we do not even know whether this principle was established by Imperial law or simply applied by the lawyers. But its existence is beyond doubt; because after the fall of the Western Empire Theodoric abolished it in Italy by his Edict. Once a farmer always a farmer; the rule applied alike to freeman and slave. In other words, whether the *latifundia* had been cut up to make holdings for slaves or for humble freeborn men, it was legally impossible to go back to the system of slave-gang tillage. True, we do not know how far this legislation was applied. Issued near the end of the Empire, its life was in any case short, and no doubt economic forces worked more powerfully than any law. For there is every reason to think that the transformation of slaves into tenants went on after the invasions during the first centuries of the barbarian kingdoms.

Let us make the best picture we can of the position of the 'hutted' slave. In strict law he remains a slave, unless formally freed; as a slave subject to his master's arbitrary authority; generally speaking excluded

from the courts of law; unable—in a barbarian state—to sit in an assembly of freemen; unfit for Holy Orders. Originally, the land that he tilled was in no sense his; it was only a detached bit of his master's, and his master could take it back at will. Carolingian surveys still go on saying of these men 'that they must serve whenever they are told to do so'. Their holdings, according to the primitive classifications servile *manses*, had their defined duties, often very humble indeed, even should they by chance hold free *manses*, their wives might owe weaving labour, owe it perhaps in the lord's workshops, a thing that could not be demanded of any free woman. But, in practice, the master has 'hutted' men whom he used to keep because it pays him to do so. There is no reason why he should not let the arrangement become hereditary. And as the whole object was to make a man responsible for his own maintenance, and as he paid rent both in dues and services, he must be left time enough to till his land; failing that, he can neither live nor pay. So he and his fellows will only be employed within limits on the demesne. As he has the status of a cultivator he must be allowed some initiative. The Lombard law which forbids him to sell land without permission, allows him to sell cattle, if it will be good for his 'hut'—and that is a dangerously elastic provision. Finally, since he has his own hearth, is head of a little household, perhaps even has some other slaves as farm labourers, he is inevitably freed from the more direct pressure of his master's power. In short, at once slave and tenant, in the end he is likely to become much more tenant than slave. His obligations tend to be regulated more and more by customary rules which, though not quite the same as those affecting freemen, form a sort of appendix to them. And as all medieval society was dominated by the idea that what was customary was also right, breach of these customs—which are set out in the surveys—soon becomes a wicked thing; and after that, a crime. Speaking of the royal slaves, clearly distinguished from the *colonii*, the free tenants, the bishops assembled in 858 at the synod of Quierzy address Louis the German thus 'Let your officers be careful not to require of them more than they rendered in your father's day.' In 905 a royal *missus* forbade the Abbot of St Ambrose at Milan to impose on his slaves at Limonta heavier burdens than they had owed when they belonged to the king. From the ninth and early tenth centuries the various grades of dependent cultivators are in process of assimilation into a single class, although originally they and their holdings had been in classes far apart. The process was far from completed. Most of the surveys still refused to mix up free and servile *manses*. Official terminology, legal rules, with their strict lawyerly style, maintain as best they can the line between the free and the servile tenant. Habit and common speech had already nearly erased it.

It is curious that this fusion—accomplished in that great creative epoch of the tenth and eleventh centuries, an age whose terrible shortage of documents has hidden from us the details—did not lead to the dis-

appearance of the word *servus* (become *serf* in Romance speech) nor yet to the wiping out of the idea of servitude. We are not here concerned with the actual history of medieval serfdom. But the survival for almost a millennium of words which seem to recall slavery may bring—has in fact often brought—such errors in its train, that a sketch of the main lines of evolution is called for. Among the members of *seigneuries*, in the twelfth and thirteenth centuries, many—far more than the Carolingian slaves, ‘hutted’ or not—are held to lack that legal quality called freedom. Yet neither the French or Italian *serfs*, nor the German *Eigene*, nor the English *bondmen* are slaves, not even as a rule descendants of slaves. Not slaves in the legal sense, because they do not belong in body and goods to a master; their relations with their lords are fixed by custom; they have their own possessions; and no one regards them as human beings devoid of rights. Still less slaves in the economic sense: they do not live on the demesne; they have their fields for which they pay dues and services, in short, they are tenants. Even the ‘every day’ serfs in Germany (*Tageschalten*; *servi cotidiani*), unknown elsewhere in the West except in Sardinia, though they owe daily services as their name implies, are much more like labourers than slaves; they have their own cottages and scraps of land. What really has changed is the very content of the notions of ‘free’ and ‘unfree’. Henceforward the ‘free’ man is the man who can choose his own lord—as a vassal does, whose homage must be renewed as lord succeeds lord, under pain of losing his fief no doubt, but in theory of his own free will; as the peasant also does who is only bound to his lord by holding some *tenure*, or living on some particular spot. That is the position of the French *libre vilain*, the German *Landsasse*, the English *socman*. The ‘unfree’ man, on the other hand, is the man bound to a lord by a tie that is personal and hereditary, a tie which in some fashion attaches to his body from birth, and is in consequence rather degrading and socially incapacitating. These new forms of very ancient juridical conceptions, appearing—as it strikes us—rather late in time, had occurred inside *seigneuries* already formed, *seigneuries* with no slaves. We may even say that they assume the absence of slaves. For such changes of meaning were only possible because the notion of slavery had lost its ancient content, almost spontaneously.

Instructive as these facts are, it must not be forgotten that they bear only on one aspect of the *seigneurie*, and that perhaps not the most important aspect. Using the terminology of the Carolingian surveys, the rise of servile *manses* is perfectly explained by the decline of slavery and slave gangs. This decline may therefore suffice to account for the formation of that very rare type of *seigneurie* which contained servile *manses* only, like Drancy, held in the ninth century by Saint Maur-des-Fossés. But it will not explain the formation of any other type. No doubt some free *manses* had a similar origin: there must have been among them a fair number of farms of ex-slaves who had been freed at the same time

that they got their land. The freedman almost always remained bound to his old master, now his patron, and became his tenant, if he was not that already. We could not understand the multiplication of manumissions, during the first centuries of the Middle Ages, if these relations of tenurial and personal subordination had not persisted. Manumission did not imply the loss of all rights over a man; it only modified the nature of his subordination. In a word, the movement towards 'freedom' was at that time, in many ways, merely an episode in the decay of the *latifundium*, which was being gradually replaced by a regime of dependent tenure. It is also likely that the great proprietors when splitting up their demesnes were sometimes led to 'hut' a few landless or evicted freemen on some of the new-made holdings. That would lead to the creation of more free *manses*. But can we really suppose that all, or even the majority of, the little holdings which, although dependent, were labelled 'free' can have arisen in either of these two ways? Apart from the fact that our texts, in some cases, clearly tell a different story, mere probability is against any such hypothesis. Can we picture, across the ages, these societies of ours as built up exclusively from crowds of slaves, here and there a few day labourers, with above them all a handful of masters? We have then to explain how innumerable peasants, by ancestral status free—in the primitive sense; not slaves—had got entangled in the meshes of the *seigneurie*. That is really the crucial problem.

IV. Government and the rise of the seigneurie: From the colonate to the immunity

Only a few centuries were needed for the transformation of most of the slaves into tenants. A much longer time elapsed before the peasantry as a class was so transformed. Even in those areas earliest 'seigniorialised', the existence of completed *seigneuries* of the classic type from Carolingian times by no means excludes other kinds of rural organisation. The best comparison available for the condition of the Italian or Frankish countryside during the early Middle Ages is undoubtedly to be found in Latin America of the nineteenth century. The *haciendas* of Mexico or Chile, with their villages of *peons* in strict subjection, never formed a network so close as to leave no room for small independent landowners. In some French provinces, such as Burgundy, for which the documentary evidence is particularly abundant, we can clearly watch a long drawn out conquest by the *seigneurie*, resulting in uncertain and shifting relations with the conquered soil, right down to the thirteenth century. This is even clearer in England; and over wide areas conquest would never be complete. This very slow motion gives the historian opportunities for ascertaining and measuring the flow at many points. But it greatly complicated the movement, which passed across a series of very different

social systems; so that care must be taken not to transpose automatically into a remote and misty past facts established for a later, and better documented, age. The simplest method will be to examine in turn the various agents whose working we can discern.

Older historians paid special attention to the action of the state, no doubt because the relative abundance of surviving governmental regulations made that action more easily traceable. But in this matter two great periods must be kept carefully apart—the last centuries of the Roman Empire; the age of the barbarian kingdoms, of the Carolingian Empire, and of its decline.

From our present point of view, the fundamental institution of the Later Empire is obviously the colonate. But the term must be used precisely; scholarship has suffered too much already from its vague use. The word *colonus* originally meant simply a cultivator. It was used early to describe, more particularly, one who cultivated for someone else, a farmer, a tenant. We may therefore, quite properly, describe as a movement towards the colonate that increase of small independent holdings so characteristic of the Roman world from about the second century. But it is probably wise to give the term that stricter legal meaning to be found in the legislation of the fourth and fifth centuries. Since Constantine's day, or perhaps rather earlier, there had been a great change in the situation of those cultivators who were not also proprietors: the law bound them from father to son to the land that they held—at least when they had held it for a certain period, which came gradually to be fixed at thirty years. So the *colonus* is no longer just a man who tills the land of another man. That he always is; but as this fact henceforward entails serious legal consequences, he is something more—a man who cannot quit his land and whom no one can detach from it. Personally, he remains free, in the sense that he is no one's slave, and so escapes the open brand of slavery. Imperial law never confused him altogether with the 'hutted' slave. But a sturdy fiction made him slave of a thing—his own fields, the clods to which he sticks, as they say, so closely that he cannot be pulled from them 'even for an instant'. In short, in the colonate so understood we are not dealing with an economic practice, in itself almost universal, but varying in extent from time to time. We are dealing with a legal institution, well defined and highly significant of a particular phase of history. Its possibly Hellenistic precedents do not here concern us. Its being and strength came not from the past but from the environment. It was introduced, like one of the wheels of a well-designed mechanism, into a vast scheme of social order conceived by a government on the defensive. In this Empire that resembled a besieged city safety seemed to lie in strict discipline, methodically organised food supplies, a regular yield of the taxes. To gain these ends, the Emperors or their staff saw no better way than that of attaching almost every man, by hereditary and unbreakable ties,

both to his mobilisation centre and to his tax quota; the decurion to his municipal office (here the laws themselves draw the parallel with the colonate in so many words); the soldier to the army; the artisan to his trade *collegium*; lastly, the farmer to his fields.

These compulsions had not been devised in the interest of the great landowners. They bore on them also, and for that matter galled them. It was no longer possible, without breaking the law, to recover a bit of land in order to increase the demesne; to replace a tenant by a better man; to make provision in vacant parts of the *villa* for peasants who had run away from another lord. However, the new legislation cannot have seemed altogether unfavourable to the great landlords; for they had in some sort anticipated it by the simple exercise of the pressure of the strong upon the weak—so much so that one might perhaps even call the laws class legislation. A constitution of 244 shows us, in effect, that at this early date proprietors were trying, quite illegally, to retain tenants or their heirs after the expiry of their leases, and even that it had 'often' been necessary already to declare this practice illegal. It was because the labour problem had become acute in an empire where population was declining and influx of slaves slackening. If you had a man you did not lightly let him go. Imagine a system of control to-day under which an employer might not dismiss his men, nor the men leave the factory. No doubt it would be incompatible with economic liberalism, inimical to business expansion except by the buying up of rival concerns—yet it would most certainly transform each business into a disciplined group, exceedingly stable, in which the employer's authority over men who could only get a living on his premises would be greatly increased. Especially if the law made no mention of wage-rates. Now the imperial rescripts about the colonate never breathed a word about the tenants' burdens, except to refer to the custom; and as we shall see custom could be changed without too great difficulty. The comparison does not run quite on all fours, because it neglects differences of social environment. Yet it may help to suggest the way in which the binding of the *colonus* to the soil reinforced most effectively the dependence of small landholders on their lord. The institution so created ended in making perpetual relationships which apparently had often been thought of as temporary or revocable: it changed obligations of private contract into rules of public law, to the enforcement of which the state directed its still considerable powers.

More than that. Working along another line, policy towards the colonate ended by making the yoke of the aristocracy on the peasant heavier. Not that Emperors ever adopted the principle of governing through a caste of lords with quasi-legal powers. On the contrary, they always showed themselves properly suspicious of any interference between the sovereign and his subjects by local patrons or chiefs. But officials were too few, the administrative machinery too difficult to handle, for

direct and permanent access to the masses; whether they would or not, emperors had often to make use of the higher ranks. It is very characteristic that—apart from some rules peculiar to the Hellenistic East, and based on its special traditions—not all peasants, which would have been logical, but only farmers were attached by the law to the soil. That was because the matter could be left to an existing authority and, if the law was not obeyed, a conspicuous individual, the great proprietor, could be called to account. Men were raised for the army from among the *coloni* by this same individual. More serious still, if we bear in mind how tragic the tax-burden was for taxpayers and the financial problem for the government, was the fact that this *dominus fundi* was responsible for collecting the taxes of his tenants. After all, only inscription on the tax rolls made the system work; a rescript of 399, the more interesting for us because it applies to the West—it is addressed to the Praetorian Prefect of the Gauls—states that the *coloni* are ‘the plebeians assigned by inscription to an estate’. And as the old word *colonus* might be considered ambiguous, because as we have seen it meant simply a man who cultivates the land of another, technical language referring to these fiscal arrangements tended more and more to describe the farmer bound to land that he had held for thirty years by the more exact term of *colonus adscriptitus*, even just *adscriptitus*. This recourse to the collaboration of the great men involved such dangers for the central power and was so closely associated with all the principles of the colonate that when, at a later date and in the East, Emperors from the time of the Heraclian dynasty were trying to improve the machinery of the state, they believed that they could only do it by an entirely different agrarian policy which should foster communities of self-governing peasants. In the West, the Empire never had time to reverse the engine.

No doubt the law of the colonate had certain advantages for the cultivator. If he was not absolutely sure of keeping the same farm for ever—for being attached to the whole *fundus*, not to any particular part of it, he could always be moved legally from one to another—at least he was safe from actual eviction. He no longer ran the risk of becoming that most wretched of beings, a landless man. But his inability to move as he liked was so suggestive of servility, his dependence on a great man had such humiliating aspects, that these characteristics of his tenure soon brought with them a string of other restrictions; and the whole body of them became the criteria of a new social class placed at the very bottom of the ladder, in spite of its theoretical ‘freedom’. By a significant change of language, where the old lawbooks talked about the *patronus* of the *coloni*—a classical name for a man who could give orders to a still free dependent—the later just used the word master (*dominus*), as you would for a slave. Already, in one of the earliest documents dealing with the institution, Constantine threatened with chains *coloni* suspected of planning desertion. That was the regular punishment of runaway

slaves. Two and a half centuries later Justinian could write that it is not certain which is the worse, the condition of the slave or that of the *adscriptitus*.

Such were the laws. One would like to know how far they were carried out; especially those regulating that attachment to the soil which, to be effective, needed such elaborate police supervision. No doubt there were soon abuses enough, and more as the Empire declined. Society was not adapted to the strait-waistcoat that it was told to wear. In the fifth century Majorian complained of 'the dodges of those who will not stay in that state of life to which they were born'; and one chance bit of evidence tells us that *coloni* managed to slip from their native soil even into the imperial bureaucracy.³ Yet this legislation of social defence must have contributed greatly to strengthen the tenurial system.

But quite evidently it did not create it. The laws never said that little independent peasants should submit to the authority of stronger men. They merely laid it down that a man who holds his land from another may not quit; and so will remain, with his descendants, perpetually bound to a subjection towards this patron, or this lord, which assuredly goes far beyond the ordinary economic relation of tenant and landlord. There would be no sense in such a policy unless it affected a numerous class, and it could hardly have worked—probably the very notion of it could not have arisen—unless it had been based on social customs which had long favoured the dependence of the weak. Even heredity and continuity of tenure were well known in practice long before they were prescribed by law, and before labour shortage forced the great owners to adopt them. The Antonines were ruling over an Empire that had no need to contemplate laws of Constantine's sort when the farmers on an African domain described themselves as 'children born and brought up on the soil of the estate'.⁴ The system of the colonate is only intelligible if we suppose that there existed before it a sort of embryo *seigneurie*.

Although an imperial law had proposed, in so many words, to fix the *colonus* to the soil 'for eternity', the legislation whose principles were laid down by Constantine was really only influential for a very short time, at least in the West—just as long as the Empire survived, or as long as it retained its vigour; no longer. This alone warns us not to exaggerate the influence of imperial policy. No doubt, in the barbarian kingdoms, *coloni* remained bound to their old masters, and the more securely as the personal nature of the tie became stronger, in a society which understood much more easily the notion of subjection to a person than the subtle fiction of 'servitude' to a piece of land. But the rule of bondage to the soil was not applicable if the state was not strong enough to track down runaways and, if necessary, impose its will on those who gained by wel-

³ *Nov. Valentin.* iii, xxvii, 1.

⁴ *C.J.G.* viii, 10570, ll. 28, 29.

coming them. The principle is of universal application. You cannot have a peasantry effectively bound to the soil without a strong central police authority; as in the Roman Empire, in Tsarist Russia; to some extent in Plantagenet England, in contrast to twelfth- or early thirteenth-century France. What police authority had the Merovingians? Or the Lombard kings? In fact, neither the barbarian laws nor the Carolingian capitularies contain a line that forbids tenants to desert their land, or the master to tear them from it. It is the lord's business to keep his tenants, legally or illegally. As the hall-mark of a class, the legal principle of *adscriptio* fell into neglect. A new public law was to intervene in another way.

The difficulty which the later Empire, strong as it was, had found in direct government could not fail to be more acutely felt in the states which sprang up among the debris of *Romania*. The barbarian kingdoms could not handle the mechanism of administration that they had inherited. As for the old Germanic system of freemen's assemblies, it functioned with difficulty amid grave social transformations, and was ill suited to huge kingdoms, whose needs and whose size were utterly different from those of the little tribes and tribal leagues of yesterday. Finally, the decline of trade and the growing scarcity of money made the extension, or even the maintenance, of a large salaried officialdom more and more difficult; whilst every kind of obstacle to communications hindered the action of the central power. It seems that the Visigothic monarchy had already appreciated the possible means of making good this lack of direct control. The point was recognised quite clearly when the Carolingian dynasty, under Pepin and Charlemagne, made its ambitious—and in the long run vain—attempt to utilise the relation of dependence, which already held men together, for the maintenance of public order. 'Let every lord put pressure on his dependents, that they may better and better obey and accept imperial orders and instruction': that phrase from a capitulary of 810 summarises with trenchant brevity a thoroughly deliberate policy.⁵ But already almost everywhere practices had grown up, through sheer necessity, which the Carolingians, for their part, could do no more than systematise, though they tried to do this with characteristic energy.

Quite in harmony with Roman tradition, the barbarian kingdoms had as a rule trusted the lords to bring their free followers to the host; to levy from them, and subsequently transmit, supplies in kind for the army; and to handle the taxes in the same fashion, so far as any taxes survived. The sacrifice of the tax revenue itself ordinarily found in Frankish 'immunities', to which reference will be made shortly, together with that of all the public services made in special—but very rare—grants, marked however a step forward and a most decisive one. But the innovation, in principle at least, affected primarily the judicial field.

⁵ *Capitul. i.*, no. 64, c. 17.

The judicial history of the barbarian states presents many very complex and often obscure problems. What makes them especially troublesome is the difficulty of drawing the essential yet infinitely delicate distinction between what the law prescribed and what really happened. A full discussion is out of the question here. Yet the broadest lines can easily be made clear. By a series of privileges, in the Frankish state called immunities, which have parallels under other names almost everywhere and especially in Anglo-Saxon Britain, the Kings grant to certain lords rights of jurisdiction over their lands and the men who lived on them, even when free. As a matter of fact, the Frankish immunity, in its strict sense, seems to have been granted almost exclusively to churches. Whether it was ever extended to laymen is disputed; if it ever was, the thing happened very rarely; for the formularies ignore it. But a similar result was reached by the working of the donations which were so freely made by the king to his followers, sometimes in the form of benefices, sometimes as out and out gifts. The royal domains too, controlled by their own administrators, were largely withdrawn from the authority of the king's regular agents, and their position was in fact that on which the immunities for religious houses had originally been modelled. Now when a royal domain was granted to a private person it was regularly given 'the whole immunity' which it had previously enjoyed, as the texts put it. Probably the larger part of great men's estates came to them in this way from princely generosity; and no doubt they had early been able to extend the advantages enjoyed on that part to their hereditary lands, either by express grant or by simple usurpation. The princes were influenced in making the grants, or tolerating the usurpations, by various motives—piety or, if that is preferred, anxiety about their own salvation, in the case of ecclesiastical *seigneuries*; the pressure of the aristocracy, eager to increase its own authority and, above all, to keep the detested officials of the Crown from intruding on its lands (their exclusion was the essence of the Frankish immunity); finally, the fact already noted, that no prince was able to act effectively in such matters, either in person or through trustworthy agents. The royal concessions, it should be added, were not absolutely comprehensive. In certain cases and for certain crimes they reserved the rights of the king's courts, the sole business of the grantee, in such circumstances, being to insure the appearance in court of his subordinates; and no doubt the kings, when acting in this way, thought that they were sacrificing what they were very likely to lose in any event in order to keep what might be saved. Only, as it happened, since the state got weaker and weaker—on the Continent, after the collapse of the Carolingian Empire; in England at the time of the Danish invasions—the lords kept those judicial powers that had been given them and usurped all or part of the rest, though the extent of these usurpations varied greatly from country to country.

Now in this way the *seigneurie* acquired a powerful instrument of consolidation and expansion. Not merely through the bare right of judicial decision, but also and perhaps mainly through the confusion of this right with the right to issue orders and punish those who disobeyed; in Frankish terminology, the *ban*. This valuable right had originally been reserved to the king and his representatives. Even so, it had been in danger of falling into private hands. For the high officials, exercising it as agents of the king, often monopolised it for their own advantage. The capitularies reveal clearly the way in which counts, or their subordinates, were apt to treat as their own dependants those whom the state had entrusted to them. They went so far as to force the unhappy and almost defenceless freemen to work like 'corvéable' dependants in their fields and vineyards and meadows. Many a group of men was annexed to a *seigneurie* in this lawless fashion, there can be no doubt. But the working of the immunities had far wider and far more durable results than this. Among those who lived on immune land, or those who though living outside it had commended themselves to its lord, a great many had at the outset been very loosely bound to the lord and owed but little to him. The *ban* allowed him to stiffen up both the relationship and its practical burdens. It is significant that, on the Continent, many of the largely novel rights which lords are claiming from the tenth century onwards—especially the monopoly of mill, oven, and winepress—are ordinarily called *banal* rights. It is not less significant that in England, where in many ways the course of events was so different, the typical tenure of a free man came to be called socage, from soke, the exercise of judicial power.

But, here again, we evidently have to do with a development which, though capital, is still secondary. Let there be no mistake. immunities and the like gave legal force to an existing movement, and canalised it; strictly speaking, they created nothing. Indeed it was not before Justinian's day that the law, for the first time, did expressly permit the *dominus fundi*, in one particular case, to chastise his *coloni* 'moderately'; and of western countries, only Italy obeyed Justinian. However, there had always been one exception: ever since *coloni* were first bound to the soil, the law had made it a lord's duty to keep them there by force. But for the state to require great proprietors to hand over malefactors found on their lands, as it did, was already a partial delegation of public authority. Moreover is not every huge enterprise almost necessarily led to provide its own internal policing, indeed its own courts? In our case, this necessity was the more strongly felt because the enterprise formed a close group, isolated in the country, and often a very long way from any centre of government. The sort of thing that we can see, almost under our eyes, on a Latin American *hacienda* can help us to imagine the play of forces on an average Roman *fundus*. In fact, our sources show clearly that, from the end of the Empire in the West and in the first centuries

of the barbarian kingdoms, the 'powerful' who naturally exercised the traditional right of punishing even their 'hutted' slaves, and maintained discipline when slaves quarrelled among themselves, stretched these powers so as to include all their dependants. So much so that the Emperors felt obliged to prohibit private prisons in 388—for freemen of course; the slaves' *ergastulum* had always been there. Rather more than a century later the biographer of St Cesarius of Arles, boasting of his clemency, tells us how very few strokes of the rod the good bishop inflicted on his 'free' dependants or on his slaves. On the legal side, this private justice, in so far as it was not considered simply as an abuse, was not easily distinguished from ordinary domestic discipline or settling of disputes. In fact it was already a rudimentary seigniorial justice; for the 'immunity' could not have worked with success if its recipient had not long been used to play the part assigned to him in his grant.

Beyond doubt the story of seigniorial origins is closely bound up with that of the states. These, as a matter of fact, made history less through their legislation than by their sheer debility. The *seigneurie* grew at their expense. In this connection nothing is more significant than the history of one single word: the word written *angaria* in the Latin sources. It came from the term which, in Achaemenian Persia, was applied to the messengers of the Great King. Borrowed, by way of Hellenistic civilisation, from that old Iranian monarchy which served as a model of empire for the Mediterranean world, the Romans used it, first of all, to describe levies made for the postal service; then to any services owed to the *staē*. The Middle Ages applied it to services (*corvées*) owed to the *seigneur*: there were in fact hardly any compulsory services but those. It would appear that requisitions for the king's army, still often referred to in Carolingian surveys, were subsequently swallowed up into the dues demanded from the tenant by his master. Each line of inquiry leads to the same conclusion, these effects of vicissitudes in the strength of the state, the particular character of its decadence; perhaps in some degree that decadence itself, none of these things could be explained without the underlying system of a dependent peasantry, on which the forces from above played. It is the nature of that substratum that we must now try to examine.

V. Protection and commendation

It is well known that the later years of the Roman Empire witnessed, not the birth of a system of personal patronage, for the institution had remote precedents in all constituent parts of *Romania*, but at least its immense expansion. The best because the simplest and most comprehensive formula describing what the weak man expected of his strong protector—the client of his patron—is that of St Augustine. 'To any one who threatens him a great man's client replies: So long as my lord here is safe and sound you can do nothing against me.' We must re-

member that the adversary so addressed need not be a private enemy or a rich oppressor. He may just as well be a recruiting sergeant, a judge, or—most likely of all—a tax-gatherer. The state, which expected a great deal from weak men and did not quite know how to protect them against the worrying of its own servants, had difficulty in bending the strong to its will. To avoid its pressure, there was no surer means than to hide in the shadow of some high-placed or rich individual. It was not always willingly that a man acquired a master in this way. To increase his authority, his prestige, his fortune, every fairly high-placed personage wanted to surround himself with as many dependants as he could: they owed him help, service and sometimes actual dues. The great man could thus exert every kind of pressure—and no doubt his seizure of control, whether abrupt or gradual, was at least as common as the spontaneous search for his protection.

Many of these clients were peasants: *clientela rusticorum* is a contemporary and semi-official term. Among the many kinds of agreements for protection, one of the most stringent, but probably not least common, was that by which the small cultivator transferred his land to his patron. He was not as a rule actually dispossessed. He gave it to get it back again; but henceforward as a *colonus*. So the great *fundis*, with their massed dependent tenures, extended their nets further and further. And individual acts of submission were not the only sort. Whole rural communities sometimes accepted a protector. Thus arose that *patrocinia vicorum* so often denounced in the laws. For the establishment of these 'one-man' villages, villages from which that man could so easily exclude royal judges or tax-gatherers, rightly appeared a very grave evil. The Emperors fought against it, but without much success. Forbidding it for the future in 415, they were obliged to condone all the past. It is true that this collective subjection seems to have been mostly found in the East. But it is hard to believe that the West was quite free of it. It did not create *seigneuries* in the medieval sense. The protector of a village, there can be little doubt, received presents or dues from his clients, by way of recompense; but being a stranger and having usually no demesne there, he did not claim services, and the land was not at law 'held' from him. Even when the villagers were *coloni*, they sometimes chose a patron whom they thought would be a better protector than their *dominus fundi*. He was usually a soldier. In this case patron and landlord were not blended. But, as we learn from a discourse of Libanius, the patron tended to supplant the lord. It was not yet strictly a seigniorial system. That assumes the union of power over men with power over land. But it was clearing the way for it. Already the shadow of the soldier-lord is being thrown across the countryside.

After the invasions this drift towards order and obedience was naturally accentuated. It spread to Germanic societies which—apart always from Scandinavia—found themselves for the first time closely associated with

the Roman world in the same political organisations and, as time went on, in a common civilisation. The movement drew fresh strength from the collapse of state authority combined with the last attempts made by rulers to exercise powers which, weak as they were, they had not resigned themselves to lose. We have several records of peasants who surrendered themselves and their lands to a master, in order to avoid military service. There was another motive force at work, the weakening of the principle of consanguinity—in clans, tribes, or similar groups; groups which, in Germany and perhaps even in *Romania*, had long been thought of as a man's adequate shelter against the arrogance of the strong. Friesland furnishes a most illuminating instance: a land where there was neither lord nor vassal, it was also one of the lands in which the bonds of blood proved most durable. Relations between lord and dependant naturally borrowed some fresh colouring from the influence of Germanic tradition; *chivage*, which became a characteristic test of complete subjection, is no doubt connected with the poll taxes of freedmen (*lites* or *Lazzen*) in Germanic law. The habits of the German *comitatus* left their mark on the relationship of lord and vassal. At length, as all know, there blossomed out what we generally call the feudal system—defining it by criteria drawn both from the rules which bound the higher ranks and from the scheme of political organisations. No doubt it would be more exact to call it the system of vassalage and of the fief. A very simple and striking test proves that there was some relationship between feudal institutions and the essentials of the seigniorial system. Most societies which had no *seigneuries*—such as Friesland, Dithmarschen, Norway—also had no vassalage and no fiefs. No doubt there is at least one exception: Sardinia, with no vassalage and no feudal tenures, nevertheless had rural *seigneuries*. Still, there remains this general coincidence. And there is a fact perhaps more significant still: regions imperfectly 'seigniorialised' were also imperfectly feudalised. Here the test is the number of allodial holdings. An *alleu* (*allod*) was a holding absolutely free, over which no superior had rights, which owed dues or services to no one, the possession of which involved no loyalty or obedience to any individual. The little rustic holding that had remained outside the seigniorial net was an *alleu*. So might a *seigneurie* be in spite of its basic stratum of dependent tenants, provided the lord owed homage for it to no one. Now, wherever we find a comparatively large number of allodial *seigneuries*, we note that far more peasant *alleux* than are to be found elsewhere have also survived, for a long time, or even permanently; in Saxony, for example, or in south-western France. Again, England before the Conquest, where relations of vassalage were most imperfect, had also a very loose system of dependent peasant tenures. These coincidences cannot be the result of chance; and in fact the relations between these two sides of the social structure are tolerably clear. Both reflected the same needs, though at different stages of the social

hierarchy; and in both the needs expressed themselves in customs which were in many ways similar.

In the upper social classes, the bond of protection and subjection was embodied in two legal acts, often simultaneous. The personal act: homage, with its symbolic rite and usually its oath. The real act: the owner of an *alleu*, in this case normally a *seigneurie*, yields it to his lord, to receive it back from him hence forward as a fief involving military and other services, and the obligation of fidelity. Turning to what we may call the peasant classes—using the term to cover actual cultivators of very varied grades—we notice a most striking parallel between the base and the summit of the social hierarchy: we find that these humble folk also deliver up to the lord both man and land.

Defective as our sources are, from Carolingian times to the twelfth century two sorts of characters or references exist in really impressive numbers. At one time we see the peasant, just like the humble folk of the later Empire, yielding his land to a lord, then resuming it, but burdened with dues and services. 'There are here', the survey of Santa Giulia of Brescia records from about the year 900, 'fourteen free men who have handed over their property to the hall (*curtis*), the condition being that each shall do one day's work a week.' At another time it is the man himself who seeks the protection, the *mundium* of a lord, 'commends himself' to him in the phrase which is specially common in England. Few things are more instructive than this word *commandise*: it was also applied for a long time to the homage of a vassal, and by this double use shows clearly the original relationship of these two degrees of personal subordination. But there was a capital difference between them. The high-born man submits himself and his life alone: the little man almost always gives away his posterity; and that was why obligations of this sort, which robbed the descendants of any power of choice, seemed opposed to freedom and came in the long run, as we have seen, to be described as servile, in that new sense which the word gradually acquired.

Perhaps because the personal bond was in this way so strict, the two sorts of submission were less necessarily associated among the lower than among the upper classes. The high-placed owner of an *alleu* who accepts it as a fief must take his vassal's oath. The peasant owner can quite easily change his coat for that of a tenant without changing in any way his personal status. In tenth- and eleventh-century Burgundy tenures of this kind were often expressly called *franchises*: even the dues which they owed were also often called *franchises*. The tenant was in this way labelled a freeman. But we must take care in our interpretation: the *franc tenancier*—the *Landsasse* of German surveys—it is true was attached to his lord by bonds far less galling than those of serfdom: they did not rob him of the social privileges of 'freedom'; and, above all, they did not bind the 'bodies' of his descendants. All the same, he

became one of a disciplined group: he owed help and obedience to the lord of his land, and might expect from him some measure of protection. It can never be too often repeated: in the Middle Ages to be free was not to be masterless; it was to be attached to one's master in what was felt to be an honourable, and was not an hereditary fashion. The protection offered by the lord in case of danger was moreover—as our sources show—the already discounted payment for the new burdens accepted by his small holders.

When we turn to the acts of personal surrender, which are apparently at least the more numerous, we note with some surprise that as a rule they make no reference to the land. The only dues usually stipulated for are those laid on the man himself or his descendants: most often they take the form of a poll-tax. But who would suppose that the protecting lord expected to get only these very modest sums? Everything indicates that—except in the obviously rare cases in which he was dealing with indigent landless men—he used the disciplinary powers which were recognised as his to bring the property of his client under control and burden it with dues and services—either by tacit agreement, or even by breach of the original contract. So that when by chance the land already owed a quit-rent to someone else, there was risk of such a dispute as that which broke out at the opening of the tenth century between the Abbey of St Gall and the church of Constance, between the old lord of the soil and the new lord of the man. From the eleventh century, the *mundiales* of the monasteries of Lorraine, whose name clearly refers to the protection, the *mundrum*, of these humble folk, owed quite heavy agricultural services.

We must not be misled by the mere form of these contracts. We must deal with them as cautiously as with the 'patronates' of the later empire. The medieval contracts of subjection regularly purport to be inspired by the free will of the new subject and especially, when the lord is a church, by piety. But in social life is there any more elusive notion than the free will of a small man? No doubt that competition between large and small farming found in other ages, which made the small man's position difficult, is not in question here. Apart from its demesne, the *seigneurie* was nothing but an agglomeration of small dependent holdings: a peasant *alleu*, once handed over, simply took its place in the mosaic without any change in its cultivation. But there were many other forces at work to make the small man pliable; from hunger—sometimes a declared cause, but generally in the case of landless labourers—to the wish to share in those common rights which a lord reserved for his dependants; up to that sheer oppression, about which the written contracts are of course chastely silent, but which many other sources disclose.

Consider, for instance, the charter of the monastery of St Mihiel which records the tribulations of a widow in a village of Lorraine. She was a well-born woman—the document says 'noble'—and her land,

classed as an *alleu*, was by tradition exempt from all burdens. Nevertheless the officials of a neighbouring lord claimed a quit-rent from this little estate. All that the lady could do to escape their persecution was to accept the protection of the monks. But for this way of escape, can we doubt that the *alleu* would soon have become a *tenure* of the village tyrant?⁶ Elsewhere, if violence did not create ties, it strengthened them remarkably. The chronicle of the Swiss monastery of Muri has made famous the adventures of the peasants of Wolen, about the middle of the eleventh century. Free allodial holders, they had seen fit to seek as protector a powerful man call Guntramm; they surrendered their lands and got them back for quit-rents. This was all that they had agreed to. Their position was thus more favourable than that of the older tenants who owed heavy services. But Guntramm soon tried to bring them down to the same level. He demanded plenty of work on his demesne. He claimed payment for their traditional use of the forest. Relying on their rights, the peasants decided to make a protest. They went to Solothurn where the king was staying. But among all the great barons this handful of rustics, with their coarse patois, could not get a hearing. When their village passed subsequently to the monastery, the services had been sanctioned by long usage: the monks continued to exact them. In this troubled society, whose central authority could not get into effective touch with the masses, violence helped to transform social conditions the more effectively because, through the play of custom, an abuse might always by mutation become a precedent, a precedent a right.

It cannot be doubted that many new *seigneuries* were created in this way—probably far more than we shall ever know. For our sources have the grave defect of telling us almost exclusively about the great *seigneuries*, which also were usually the oldest. The seigniorial system was far from losing its powers of growth by the end of the first feudal age. Any possessor of a fair-sized rural estate—a peasant grown rich, a manorial official grown important in his master's service, a lucky man-at-arms—had only to stop tilling it all himself, cut two or three holdings out of it, or attach some other peasant's holdings to it; and soon this parvenu would become a lord in a small way. For in those days it was hard to think that one man could hold land of another, especially if it was held from father to son, without being, by that very fact, in some way under his landlord's authority. Feudal society did not understand purely economic relationships. Justice itself was so close to the business of carrying out judicial decisions, that the right to levy dues on land carried with it, almost automatically, the right of deciding cases that arose out of the levy: we actually know of a *vilain* in the île de France, so late as the twelfth century, who although a tenant had a sub-tenant below him, and who managed to establish his claim to judge

⁶ Lesort, A., *Chronique et chartes de Saint-Michel*, no. 33

his sub-tenant if he did not pay his quit-rent.⁷ The distinction between a lord and a mere lessor, between a subject and a mere lessee, would only be established very slowly, and by the action of a jurisprudence more refined than that of the early feudal centuries.

But we must admit that most cases clearly known to us reveal, not so much the absolute beginnings of seigniorial power, as the extension of powers already existing. Here and there—in Germany particularly down to a rather late date—we see whole villages submitting themselves to some great man who, however, owns other villages. Elsewhere, fairly important groups submit by common consent. But usually, like the fourteen freemen of Brescia or the villagers of Wolen, they submit, whether they like it or not, to some ancient *seigneurie*. And most of the acts of submission are those of single families. As only a master already strong could protect a man effectually; as only a prominent personage of this kind could put decisive pressure on a man (we must always consider heads and tails!)—the protector of lands or body was generally an individual, or religious institution, already protecting other dependants in the same fashion. So a *seigneurie*, once only a modest nucleus, threw out long tentacles on every side. This dispersion through growth raised serious problems of administration. It certainly did make the working of the system of labour services and the upkeep of vast demesnes appreciably more difficult. But no essential change had been made in the nature of the institution. Even when the lord was a new man in every sense of the word, his relations with his tenants were likely to be modelled on a traditional plan. The very silence of so many documents as to the precise meaning of the tenant's burdens, a silence which can only be explained by an implied custom, is in itself exceedingly instructive.

But one country provides us with a still more significant experiment. Consider the structure of English society during the century before the Norman Conquest. The great men have vast demesnes cultivated largely by slaves—for slaves remained much more numerous at this time in England than on the Continent—but also with the help of tenants' services. Other slaves are established on the land. Side by side with these servile tenures are quantities of little dependent holdings, whose holders are still counted freemen. They are for the most part regularly protected by someone. Anglo-Saxon society is exceedingly disturbed, like the continental societies, and the independence of the weak is gravely endangered. Like the Carolingian state, the Anglo-Saxon state wishes humble men to have superiors who can vouch for them; it is extremely suspicious of lordless folk. (It also makes use at the same time of methods of collective responsibility unknown in Frankish Gaul.) Yet there still survives a very dense network of peasants whose land is held from no lord, held allodially as they would say elsewhere. Everything has its parallel across the Channel. And yet it is hard to speak of an English

⁷ *Cartulaire du prieuré de N.D. de Longpont*, no. 35.

seigniorial system. At most there is only the first sketch of such a system. All the institutions are so loose, so shifting, so ill adjusted, that they cannot produce well articulated and disciplined groups fit to conduct economic enterprises that will function properly. The holdings are often scattered far and wide, not conveniently arranged about a central demesne. Some of the dependants seem only to have commended their persons. But many have 'come to the lord with their land'. Among these, some can break their tie with him at will: 'they can go with their land to whatever other lord they wish.' Sometimes jurisdiction is with one lord while service is owed to another; or jurisdiction over a man is with a lord to whom he is not commended. And as the role of judicial assemblies of freemen, on the German model, remains considerable, it complicates matters; for the king may have handed over one of these 'hundred courts' to some great man, his perpetual delegate, who will thus become one more personage on the list of those upon whom the peasant is, in some sense, dependent.

It is not our business to try to explain how, out of all these diverse elements, the conquering aristocracy, with brutal vigour, managed to build up the manor. But the value of one significant word should be stressed—the classic word 'manor' itself. In the Norman French of the conquerors, it had nothing to do with jurisdiction. It meant a good substantial house, such as a Norman lord usually occupied. But when they had to find a label for the complex whole of dependent farms and subject people which henceforward was grouped about the fields of the demesne, one name came naturally to their lips—the name of the headquarters from which orders were issued, and to which were brought both the lord's harvests and the pennies or the produce that tenants owed. In just the same way in Eastern France *cour*; in Italy *corte*; in Germany *Hof*—that is, in each case, the lord's own dwelling enclosure—often served to describe the whole *seigneurie*, including the *tenures*. In England, in the early days, hall was readily used as the equivalent of the foreign word. The house of the local magnate was the necessary centre of every genuine *seigneurie*.

The lesson to be drawn from England is clear. Castille enforces it, if anything with greater emphasis; because in Castille no conquest, imposing by violence arrangements favourable to the interests of the conquerors and agreeable to their habits, had come to disturb the natural course of evolution. Castille too had known a system of peasant commendations which, under the name of *bebetrías*, often embraced whole villages; but it only led very late and very rarely to the establishment of *seigneuries* properly so called, on the French, German or Italian model. Relationships of commendation, of the sort that we find in the feudal era and that immediately preceding it, were able to give to an existing seigniorial system immense expansive force; but by themselves were powerless to create such a system, and to make of it a clearly defined

social type, juridically and economically dominant. In those countries that were 'seigniorialised' profoundly and spontaneously, seigniorial origins go back to social arrangements older and unhappily much more obscure than feudalism or the patronate of the later Empire.

VI. *Chiefs and villages*

The surest index that we have of the existence of rural chiefdoms in primitive Europe comes from the study of place-names. Everywhere, masses of the most ancient villages bear the names of men, generally followed by a proprietary suffix which varies with the language. In Romania, Germanic personal names in combinations of this kind usually indicate that the place was only named after the invasions, and so do not take us very far back. But the map swarms with Roman names. In France for example there can be no doubt that the vast majority of the Antonii of Antony or Antoigné, or the Flavii of Flaviac or Flavy (to quote a couple of examples from among thousands) lived under the Emperors. Here and there older ages of Gaul are revealed: Brennus, of the legendary capture of Rome by the Gauls, survives in the Brenats and the Bernys. Roman or Romanised Italy has its Corneglianos and Savignanos. Germanic countries show native personal names with various suffixes, of which the oldest are in *-ing* and in *-heim* (The old view that the *-ing* suffix implied tribes or clans has given way to the view that it merely implies any sort of dependence; the Heuchlingen may be Huchil's men or his relatives, perhaps both.) But it is not enough to establish that names of this sort exist almost everywhere; we ought to be able to measure their density, which obviously varies from region to region. Unfortunately place-names study has not yet reached the statistical stage. It does, however, seem that the density is particularly high in Gaul.

Naturally, names of this sort had no guarantee of immortality. A revolution in village life might always lead to a change of name. But for that, names with a Celtic element would obviously be far commoner in France than they are; moreover we know about medieval rebaptisings of villages. Yet such changes occurred only sporadically and at long intervals. (We shall see shortly why they were probably most frequent at the opening of the Roman era.) As a rule, the settlement and its territory retained, through the ages, the name of some long forgotten person; as if a half religious reverence clung to the memory of the ancestor whose aura still floated over the soil. What precisely had this eponymous hero been when alive? A great proprietor who assigned land to his slaves? All that we know of old Celtic, Italiot or German society—in which slaves were beyond a doubt infinitely fewer than free men—or, indeed of the society of the Roman era, in which there was never anything like a complete system of rural slavery, abso-

lutely excludes this as a general explanation. Was he a lord? In the medieval sense of the word it would be an anachronism so to describe him. Yet whatever juridical word would fit him best—and in this connection we must recall, with Antoine Meillet, the extraordinary mobility in Indo-European languages, of substantives expressive of the authority to command—how can we fail to suppose that this man whose name the village took was some sort of a chief or, in the phrase that French documents of the *ancien régime* still applied to the seigneur, '*le premier habitant*'?

Scanty as narrative sources are for these remote times, they still yield a little valuable information. Caesar pictures Gaulish society before the Roman conquest as dominated by an aristocracy of 'knights' who owe their strength to their 'clients'. This latter Roman term could give only an approximately accurate notion of the Celtic reality. To Caesar's mind it implied men free but dependent. Themselves probably of very varied rank and condition, they would be attached to the chief by all kinds of ties of subordination and interest, including—as so often, under our eyes, with the Chilean *peon* and his *haciendado*—that of debtor and creditor. Although some may have lived in the master's house, there were certainly far too many of them for that to be the rule: how could he have fed them? And as they cannot have been concentrated in the towns, which were few and unimportant, they must have been, for the most part, countrymen. Besides, the great men who were surrounded by these vast clientèles were also rich men. Most of their wealth must have come from the land. But how? Likely enough slaves cultivated some land for them directly—some modest embryonic *mansi dominicati*. We cannot imagine that they had vast slave gangs working on *latifundia*. There is no suggestion that crowds of slaves surrounded them. Can we doubt that they drew largely on requisitions or gifts from peasant clients? And that there were whole dependent villages is not merely a matter of conjecture. Caesar tells us that Lucterius the Cadurcian had the fortified 'town' of Uxellodunum dependent on him. It is highly probable that this was not an exceptional arrangement.

Turn to a related society at a parallel stage of evolution, first-century Germany. Tacitus calls the hereditary chiefs of little local groups *principes*. In the same language, familiar to Latin writers, Livy had pictured the 'princes' of the eagles' nests among the mountaineers of Northern Italy; *principes castellorum*. And this is how Tacitus describes the revenues of these odd little potentates, or at least that part of their resources which did not come simply from their own land cultivated by a few slaves or freedmen whom they sometimes set up as farmers. 'It is the custom', he says, 'that each tribesman shall give the chief presents either of cattle or of part of his harvest. These free gifts are marks of respect, but they also supply the needs of those who receive them.' This description is most instructive. The gift, Tacitus insists, is free. But it is also customary.

In a society ruled by respect for the past, a traditional gift is very near indeed to an obligation. After all, gift and custom, we may say without exaggeration that these linked notions dominated the beginnings of seigniorial dues and services. In the Middle Ages dues were usually called simply 'customs', as if, when you thought of any due, you had in mind immediately its sole juridical basis. And page after page could be filled with the deliveries in kind, in money, or in service which—throughout the whole evolution of the *seigneurie*—were described as gifts, prayers, *demandes*, *bede* (that is, in modern German, *bitte*), boon-work, *bienfaist* (*beneficium*, in the *polyptyque* of Montierender), *requite*, *eulogies*. Simple terms of courtesy, for the most part, no doubt, or even hypocritical disguises of harsh compulsions; when a man was angry or perfectly frank he might talk about 'exactions'. Yet the terms had often some correspondence with ancient fact. First you made a request, doubtless accompanied by gentle but firm pressure, later you made a demand, arguing from precedent. Those 'oblations' of capons, of pigs, of loaves and even of money which, as late as the twelfth century, some Lotharingian tenants had to bring to their lord in person, when they paid him solemn visits on certain great occasions, differed very little from the gifts reported by Tacitus. Like them they were marks of respect, like them they symbolised submission in its most concrete form, like them, in the end, they were made obligatory by an iron tradition.

There is no great difficulty in finding other relevant evidence. The most useful comes from societies which were absorbed into western civilisation rather later than those referred to so far. The *machtiens*—that is to say chiefs who stood surety for their men—referred to in some Armorican sources of the ninth to the eleventh century, have been much discussed. There can however be no great doubt about the main features of the institution. Some Latin ecclesiastical writers who relish both the pun and the hit at a lay power call these *machiens* the parish tyrants: they 'own' the parish (*plebs*: Breton, *plou*): they 'reign' over it by hereditary title. They witness grants of land in the parish. Perhaps they sometimes levy a fine when land changes hands by sale, as the medieval seigneur did later. In fact we know that they became vassals at an early date. Some of them are even found among the vassals of the Frankish Empire; some founded knightly families.⁸ We can hardly fail to recognise them as ancestors, part ancestors at least, of that Breton seigniorial class which later documents reveal. In a kindred society, that of Wales, though at a still later date and no doubt under the influence of neighbouring English institutions, the 'kings' of the *cantrefs* or hundreds became lords of the ordinary sort. This last instance shows us clearly how an embryo manor, and under favourable circumstances a real one, could develop itself around the nucleus of a small demesne the cultivation of which had been mainly entrusted to slaves, by subjecting different categories of de-

⁸ de Courson, A., *Cartulaire de l'abbaye de Redon*, nos cxcvi, ccclx

pendants to food-rents, to the duties of forced hospitality, and to some services. In this case the dependants would include *tavogs*, probably for the most part men of a conquered race, and free tribesmen who had to obey the chief in spite of their hereditary 'liberty'.

Analogies can be drawn, hints can be taken, from more remote civilisations. The history of the Comans, established on Hungarian land in 1243, starts indeed quite differently from anything western. They were in fact pastoral nomads who had taken abruptly to a sedentary life. Western peasantries had only passed from a collecting and hunting to an agricultural civilisation very slowly, and in remote ages. But much can be learnt from the way in which, among these former shepherds, a nomad chief was gradually transformed into a landed proprietor. In the Maghreb to-day a great man—often a marabout—may succeed, by an equally significant transformation, in securing control over a rural community and making it tributary to him. Even among the Thai of Indo-China there are distinct traces of a similar process. The chiefdoms of black Africa, when we get to know them better, will no doubt also furnish examples.

Coming back to the European *seigneurie* we can unearth in it various survivals from a very remote past. We have all heard of those practices which old French feudal lawyers called *droits ridicules*, a term which shows how much the practices surprised them. They are such things as games, dances, various rites (a compulsory bath for example) which the inhabitants of certain villages, or some of them, and particularly the young folk, had to perform before their lord. Belated attempts were made to find rational explanations of these things, but really they had none. Take the famous duty of flogging the moats of the château on certain nights, in order, so they said, to prevent frogs from disturbing the lord's rest. Would the sound of beaten water be really more conducive to sleep than the sound of croaking frogs? Why only on certain nights? Was the lord to lie awake the rest of the year? Let the folk-lorist explain these customs if he can. What concerns us is that in them the seigneur acts the probably very ancient part of a kind of president over ritual practices which have come down, there can hardly be any doubt, from an immense antiquity. And if the *jus primae noctis* sometimes did exist (and there are a few ugly suggestions to that effect, especially in documents from the Pyrenees) we must certainly have not to interpret it as the product of a petty tyrant's lust. We must look rather to some very old rite by which the chief deflowered virgins, and for this parallels could be found for us by anthropologists.

But the inquiry must not be conducted solely from the side of the lord. We can get just as important evidence from the study of peasant society itself. The master of a slave gang has no organised group with which to deal. The authority of a chief, on the contrary, is superimposed on such a group but does not abolish it. It is therefore of the utmost importance to observe that in the countries with which we are concerned the

seigneurie had by no means killed the village community. As far back as we can go, we find the two institutions living side by side. However dependent the rustic might be on his master, he was still always under the authority of the village group of which he was a part. That group never lost its own collective life, often very intense. No doubt its cohesive force varied with regional traditions and forms of settlement. But let us consider, for example in France, the districts where it was most fully developed. We shall find them unquestionably north of the Loire and on the Burgundian plain. In this land of big villages, open fields and long strips, regularly grouped in 'furlongs', the face of the country with its distinctive design suggests irresistibly that the original occupation of the soil was planned. Collective grazing rights over the stubble, and the compulsory rotation which forbade the cultivator to choose his own crops, were binding on all, often even on the seigneur and his demesne lands. Now this was also the classical area of the *seigneurie*, the one in which it was oldest and most solidly established. So it would be a grave error to assume any necessary opposition between the bonds of the village community and those of the *seigneurie*. Although custom was mainly responsible for the maintenance of the collective rights over the fields and the grazing arrangements, there was necessarily occasional intervention by some regulating authority with the sanction of some court in reserve. Under medieval conditions the lord's was the only court—and its members were often peasants. At law, the lord alone could issue orders, through his right of *ban*. In practice however he often left a fairly wide field for the action of the community itself, especially in the election or nomination of the village officials who saw that the rules were kept. Methods varied indefinitely, not only from region to region, but also from place to place in the same province. Yet it is never to be forgotten that even when the lord had the most complete monopoly of the issue of agrarian orders, he was always supposed to act in the interest of the community and as the interpreter of its tradition.

But two chief classes of evidence above all enable us to establish the survival of very ancient village institutions underlying the *seigneurie*. They also make clear the fluctuations in the progress of seigniorial power. They come from the history of peasant agriculture and from that of common rights.

The *manse* we have already met. There is no more mysterious institution in all agrarian history. Nor is there any whose interpretation, if ever we can be quite certain about it, will throw more light on the remote pages of that history. A complete and certain interpretation is not yet possible; but some facts about the *manse* are already sure.

First, that it is found almost all over Europe, under all sorts of names; *mansus* most often in Romance lands, but in western Gaul under that of *factus*, a desperately obscure old word; *büfe* in Germany; *bide* in England; *bol* in Denmark, possibly *ran* in Armorica. Contemporaries already re-

cognised that these words all meant much the same thing; and the facts behind them were markedly similar. Because of the nature of our sources, the functions of *manse*, or *hôte*, or *hufe* (omit for a moment the *bol*) appear most clearly to us as part of the seigniorial organisation. It would obviously be a mistake to assume a priori that this aspect of the institution was primitive. But, as it is the aspect most easily examined, we may well begin with it.

In the medieval *seigneurie a manse*—for convenience we will keep to that word—was the customary unit of tenure. But all holdings were not *manses*. The *manse* often had as its neighbours, and on the same *seigneurie*, dependent holdings otherwise described. Their names varied: in Gaul the commonest was *hôtises* (*hospicia*), also *apendariae*, *laiznes*, later *bordes* or *chevannes*; in Germany *Schuppen*. Just like the *manse*, the *hôte* served as a unit for surveying purposes. In this period, we never hear of renders in money or kind or services as due from separate pieces of land. Apart from the strictly personal obligations, it was the entire holding, whatever it might be, that owed. Whether one tenant held it all or not was of no great importance. Although scattered all over the fields, its parts, from the seigniorial point of view, made up a single taxable unit. But often the liabilities varied, in an oddly capricious way, from one *hôte* to another. The *manses*, on the contrary, as we already know were divided into well defined juridical classes, *serviles*, *ingénuels*, occasionally *lidiles* (from the Germanic *laet*, latinized as *lidus*, a freedman or sometimes the member of a conquered population). Within each category, and on the same *seigneurie*, the obligations were in theory uniform, so much so, that if you knew what was owed by the first on the list, you knew about all the rest. It is true that, now and then, there were subsections with different obligations within the same category. These anomalies, which in fact did not make things much more complicated, were found almost exclusively on the great *seigneuries*. Probably they reflect their history, each subsection corresponding to a fresh accession to their vast complexes of lands and rights, which had been built up stage by stage. Thus the rules for a *hôte* were the result of the circumstances of each individual case, the rules for a *manse* were a matter of group-custom. If we bear in mind further that there were always far fewer *hôtises* than *manses*; that they were on the average considerably smaller, and that, finally, among their very miscellaneous occupants are often found men expressly described as newcomers (*advenae*), we can hardly fail to see in them little holdings created late, on land hitherto unoccupied, by squatters, some of whom came from a distance while some were perhaps just younger sons of needy local families. The very words *borde*, *chevanne*, *Schuppen*—which literally mean cabin—are significant. This practice of extending the description of the dwelling to the land dependent on it was common enough: the word *manse* (*meix* in Middle French, *mas* in Provençal) also, strictly speaking, meant the cultivator's dwelling. But the man who had a *manse* had a real house, he

who held a *hôtise* seems to have had nothing but such a hovel as the custom of many villages—and not so long ago—allowed paupers and immigrants to build for themselves on the fringes of the commons, provided the materials were shabby enough. Documents later than the Carolingian surveys suggest that holders of *manses* were the only people who had a full share in the rights of common. In fact a *hôtise* was frequently a tenure *en posse*, when it had reached a certain size—probably by bringing fresh land under cultivation—the lord might decide to assimilate it henceforward to a *manse* or half *manse*; as if a well managed *seigneurie* ought, in contemporary language, to be all *amansée*. In short, the *manse* was the representative, and certainly the primitive, cell of the 'seigniorialised' village.

But a still more important feature differentiated it from the *hôtise*: its permanence. No doubt during the era in which we can first clearly grasp the methods of seigniorial administration, that is the ninth century, its indivisibility seems no longer absolute. Often two or more tenant householders live side by side on the same *manse*; a thing almost unknown on the *hôtises*, because as these had no standard size, if one of them was cut up, you simply said that there were now two or more. But the *manse* remained a fiscal and administrative unit, even if split among several holders. The surveys very seldom show the least interest in the way in which the land and its burdens were divided up among the heads of the holding families. The burdens, the only thing that mattered, were those of the *manse* as a whole, the coparceners owed them in common and, no doubt, jointly and severally. But it can hardly be supposed that the subdivision of the *manse* was a primitive thing. It would appear to be only the first stage in that disintegration, which was to lead—at amazingly different dates in different regions—to the disappearance of the *manse* itself. A unit of survey which, once it no longer coincided with the working facts, appeared only as a fictitious entry in the books of seigniorial administration, could only be preserved by a great effort, an effort that was almost bound to fail in the long run. We notice that the survey of Saint Germain-des-Prés is already forced, whether it likes it or not, to find room in its statistics, indeed sometimes in connection with the levying of dues, for the hearth as a unit. Other documents of the same date prefer to reckon by households, or by *coulonges* (*coloniae*), each containing a single ménage of tenants, rather than by *manses*. The way in which the documents have survived enables us only to observe the system, which was no doubt very old, at a time when—at least in the big villages of northern Gaul—it was already in a state of decay. Everything suggests that the original rule had been everywhere one *manse*, one family. It was Bede who translated the English word *hida* by *terra unius familiae*.

The energy which the seigniorial authorities expended in trying to maintain the system is sufficient proof that, by its regularity and stability, it greatly helped the levying and guaranteed the yield of the dues. But there is more direct evidence to the same effect. In 864 Charles the Bald is

trying to check the threatening break-up of the *manse*. His expressed aim is to preserve the *seigneuries* from 'confusion', indeed from 'destruction'. In fact when, at a later date, the break-up was complete it became necessary to assess the dues on each parcel of land or on every house, and to require services from each head of a household in person. This was a great and troublesome complication which helped to hasten the remodelling of the *seigneurie* itself. Following the matter further, we can be sure that some of these *manses*, so useful to the lord financially, had been made by him in his own interest and all of a piece. These were the servile *manses*, cut out of the demesne for the use of the 'hutted' slaves. So too, no doubt, were those formed here and there, in conditions probably parallel, to establish freedmen (*manses lidiles*). But can we believe that the whole system was made by the lords? That the *manses ingénues* in particular, or most of them, were so made? This would imply that they functioned only inside *seigneuries*. But there were *manses* or *hufen* in the Frankish state, and in England *hides*, in the hands of freemen who were subject to no one, either in person or for their lands, and who themselves cultivated holdings so described, as the Carolingian military capitularies, among other documents, testify. As for the Danish *bol*, it was to be found all over a country which at that time was in no way 'seigniorialised'.

The history of public finance provides further valuable evidence. Taxing authorities in great states made use of the *manse* or its equivalent; perhaps from as far back as the Roman Empire, if it is true—as it may well be—that the taxable units originally corresponded with agrarian cells of this type. The unit was officially called a *caput* or *ugum*, but in the provinces we know that there were a great variety of equivalents for these terms. We know too that Franks and Anglo-Saxons used the *manse* or the *hide* as the unit, when they made their levies to buy off or to fight Scandinavian pirates. This fiscal use reacted in the end on terminology: in Frankland the demesne which the lord himself cultivated was also called *mansus* or *hufe* (but with a distinctive prefix: *in-dominicatus*, *Salhufe*). If in England, on the contrary, the demesne was never called a *hide*, the reason seems to be that this was because it was not taxed, whereas among the Franks it was. However, no one would fancy that peasant *manses*, whether *tenures* or *alleux*, were simply invented and put on the map by bureaucrats who lacked a proper survey. Apart from anything else, their date and their regional distribution are all against such a notion. We hear of *manse* and *hufe* and *hide* well before the Scandinavian invasions, and the tax system of the later Empire, which one might perhaps be tempted to accept as the creator of the Roman *mansus*, could obviously not have created the *hufe* beyond the Rhine, or the *hide*; still less the Danish *bol*. Evidently, governments or their experts did no more than utilise a system of land division already existing and widespread in ancient European rural society. And the lords did the same, for their own ends.

Terra unius familiae: Bede's words give us in all probability the key to the institution in its primitive form. But we are not to think of the little matrimonial family of our later ages. Ill informed as we are about the history of blood relationships in the dawn of our civilisation, there is every reason to think that the group, whose original shell was the *manse*, was a patriarchal family of several generations and several collateral households living around a common hearth. Subsequently, the progressive disintegration of these large groups of blood relations, accompanied no doubt by a growth of population, led to the break-up of the *manse* itself, and the indivisibility that the lords were striving to maintain, from the ninth century onwards, was perhaps only a survival of old communal rules of inheritance which they had adjusted to their own interests. In the same way the Turks, as supreme landlords in Yugoslavia, preserved the integrity of the peasant *zadruga* until very recent times. It is certain that subdivision among many heirs, entailing a perpetual rearrangement of the tenancies, could not be viewed favourably by authorities anxious to maintain a regular levy of rents and services. In fact, they only acquiesced in it under pressure of changes in the surrounding legal atmosphere; or when the fines that they could exact at the deaths of tenants yielded more than the annual dues, and so made an increase in the number of occasions on which a fine could be secured advantageous to them. This only began to happen when the seigniorial system was nearing its decline.

So we have every reason to suppose that the primitive occupation of the soil was carried out by patriarchal groups. Sometimes they lived apart from one another, in that case, protected by their isolation in regions of scattered settlement, they usually manifested remarkable power of resisting subdivision. Elsewhere they formed parts of larger, nucleated, village communities. Their shares were not equal. Tacitus had observed this inequality in the German villages long ago. And in the ninth-century surveys, although their descriptions are not so detailed as might be wished, nothing is more striking than the immense differences in area among *manses* of the same class within the same *seigneurie*. The exceptions to this that we find are probably to be explained by a secondary settlement in which the plan was made artificially regular. This lack of uniformity in the size of the typical *tenure* is, at first sight, the more surprising as it contrasts with the almost absolute uniformity of burdens. At Villeneuve-Saint-Georges, for instance, the smallest free *manse* has exactly the same burdens as the largest which, besides having 40% more meadow and 60% more vines, contains rather more than fifteen times as much arable land; and each was worked by a single household. It is perfectly clear that these ancient peasant societies had nothing democratic about them, quite apart from any lord's power. On the other hand, it is of the greatest interest to observe, in connection with the origins of that power, how the burdens laid on a whole category

of different-sized *manses*—sometimes up to nearly a hundred in great *seigneuries* and big villages—were strictly equalised. The patriarchal family being the primitive cell of rural society, each owed the chief the same weight of dues—or, if you like, of presents—and the same amount of work.

No complete account of the lord's relations with the village community can be derived from study of the cultivated land alone. For however great its contribution to livelihood, agriculture had by no means altogether displaced the very ancient practices of pastoral life, hunting, and food collecting. By his fields alone the peasant literally could not have lived. All about the area more or less permanently cultivated and, when under crops, held in strict individual or family possession, he required access to immense stretches of common waste left in its natural condition. These moors and marshes and forests did not merely furnish necessary food for his cattle. His own nourishment depended on them, for wild vegetables and fruits were even more important in his dietary than wild game. Nearly all his implements were of wood. His fire was of wood or turf. His beasts were littered on heather or dry leaves. Even his arable needed the waste, for generally it got no fertiliser except sods of turf or piles of reeds spread on the land before the seed was sown. In villages where there was no lord, or where the lord's power was a late growth, the village community sometimes retained absolute control of these common lands, it owned them, in feudal phrase, *en alleux*. It is noticeable moreover that where common rights were specially important to the peasant—as in the largely pastoral life of the Alps and Pyrenees—there the lord's hand always lay less heavy than on the neighbouring plains. So too on the shores of the North Sea, in Friesland or Dithmarschen, the need for collective effort to drain marshes or keep out the tides probably acted as an obstacle to the progress of the lord's power. For anything that made a community more coherent favoured its independence. But throughout the greater part of Europe, where common was essential but still only a sort of annex to the arable, the lord almost always extended his power over commons as well as over fields.

If we were to trust formal language, we might even think that this power had wiped out that of the peasants at a very early date. The ninth-century surveys generally treat forests and grazing land as part of the demesne. But that was the result of a simplification—heavy with consequences, as it proved. A turn of phrase common in the Frankish documents describes the realities better. When a charter of sale or gift enumerates the elements that make up a *seigneurie*, it usually inserts, side by side with the fields meadows or vines of the demesne, and its profits from the *tenures*, the *communia*; thus indicating that the land subject to collective use was also placed under the master, and yet that he remained compulsorily obedient to 'common' usages over it. Such overlapping rights are repugnant to the relative precision of our more developed juridical

thought. But we must not boast of our clarity: how would our immediate ancestors, trained on the strict Roman law, have described the so-called property of the humblest shareholder of a great company in its goods? In any case these entanglements were in no way strange to men who saw a whole hierarchy of rights, one above another, resting on nearly every scrap of land. It is no doubt vain to look for the true medieval 'owner' of the commons. But who 'owned' the *tenure*? The cultivator? His lord? Or, with the establishment of the feudal system, one of the various personages of whom the lord held in fief, or in sub-fief? The truth is that the peasants' rights of user over the commons, and the lords' superior rights, were regarded as equally worthy of respect. The latter were recognised—as in the case of the *tenures*—at one time by certain levies from the individual peasants; at another, and apparently a later, time by a quit-rent on the common land, paid by the village community as a whole. And of course the demesne had its share of all common rights.

That this system, with its many dangerous uncertainties, led to frequent disputes and abuses of power the documents give eloquent witness. The earliest struggles between lord and community about woods or wastes—or at least the earliest certainly known—date from the ninth century. They became specially bitter after the great clearances of the eleventh, twelfth, and thirteenth centuries had considerably reduced the area of surplus land; at a time when the revival of Roman Law had given the lord a formidable new weapon. Too often it was a case of earthenware pot versus iron pot. But there was no weakening about the principle of divided rights. 'Flowing water and springs, meadows, grazing grounds, forests, *garigues* and rocks', the Customs of Barcelona record, about 1070, 'belong to barons not to be held *en alleu*' (that is, in disregard of any rights but their own) 'or as part of their demesne, but in order that their people may enjoy them at all times.' The lord was not merely the chief of individual men, and as such endowed with authority over what property each man held; he was also the chief of a group, and consequently the supreme master of lands subject to group use. So that the *seigneurie*, so far from being in opposition to the village community, was dependent on its existence for a particularly important aspect of its own powers and revenues.

VII. *A general sketch of the evolution*

After this search down converging roads, we must now try to describe that whole evolution which ended in the appearance of the classical seigniorial system; or rather, those evolutions. For we are bound to take regional peculiarities into account. These we have stressed from the first. In the various curves, many sections must show the dotted lines of hypothesis—and others must remain blank.

In the beginning, we catch glimpses of peasant communities under their chiefs, to whom the various families (in the wide sense) that made up the group owed ritual gifts, and no doubt also assistance in a general way, which would be sure to take the form of certain services. The existence of these village chiefdoms is clearly attested in Gaul before Caesar and in Germany before the invasions, it may be traced in the society of Armorica; it appears more distinctly in that of Wales. We may assume something of the sort in ancient Europe more or less everywhere. Evidently we are here in touch with one of the oldest lines of cleavage in our civilisation. Medieval and modern nobilities grew up much later and in a very different environment. The medieval nobility, as defined by the custom and law of the twelfth and thirteenth centuries, was distinguished by its hereditary calling to knighthood. The noble man was normally also a military vassal; and it was from the customs of vassalage that the noble class, once it had been consolidated, borrowed its way of life, its class cohesion, and the fundamental rules of its law. These are all relatively late institutions. But, viewed on his economic side, the noble man is also a man who lives by the land without working on it. He is at once master and exploiter of those who do the work. In short, the typical noble fortune is a seigniorial fortune; so that we can hardly fail to recognise in the distinction between nobles and common folk the direct outcome of that ancient cleavage which had occurred in the dawn of history between 'client' peasants and the local chief who was fed in part by what they gave him; between the people of Brennacum and that Brennos who gave his name to the village. And it is hard not to believe that, in spite of repeated remodellings, of social rise and fall and the luck of all sorts of adventurers, the old core of the noble class was formed by the descendants of these rustic chieftains, among whom were recruited—for they had to be recruited somewhere—most of the vassals and most of the knights. The stories already told of that Breton *machtiern* who became an Emperor's vassal, and of that other one who founded a knightly family, are no doubt symptomatic.

But the word 'chief' is beyond dispute much too vague. From what sources did these people draw their power or prestige? It is particularly tempting to link primitive village organisation with that of the clan or the tribe, and to imagine behind the figure of the lord-to-be the Old Man of a group of kindred, or someone who claimed his place, the group, of course, being bigger even than that of a patriarchal family. This may sometimes have been the actual course of events. A Bavarian formula of the Carolingian era seems to identify *vicus* and *genealogia*. We know from our sources and from place-names that the Lombards and Burgundians, and from place-names that the Franks, sometimes settled on the land of *Romania* in *farae*, groups bound by blood relationship. But a point already noted, to which reference must again be made, suggests that the facts were rarely so simple.

As early as we can study the *seigneurie* we find that it by no means always corresponds with the village territory. On the contrary, the territory is frequently divided among several seigniorial allegiances. Many scholars, in many countries, have noticed this, almost always with the same surprise; for the notion that there must be an exact correspondence seems innate. In fact, as comparison of special studies proves, what each historian inclines to treat as an exception in his region was really, if not exactly normal, at least exceedingly widespread. No doubt in many instances we are dealing with a secondary subdivision. In particular, as the habit developed of 'housing' vassals who had previously fed at their master's board, great lay lords and ecclesiastical communities were obliged to cut fiefs out of their lands, on which these armed followers might live. These grants were often made up of fragments cut from much greater *seigneuries*, indeed even out of *manses* taken here and there from different *seigneuries*. The vassal would be more faithful if his scattered fee made autonomy on his part difficult. In this way the break-up of villages between many masters increased perceptibly. The working of donations, and indeed of sales, to the Church had similar effects: if you had a whole village you did not always give or sell the whole of it. Add to these divisions those due to inheritance. And yet it is evident that we cannot always, or even ordinarily, explain the presence of several seigniorial authorities, side by side on the same ground, by a supervening disintegration. Often enough we can see a directly opposite evolution—towards integration. Look at the hamlet of Mons Acbodi, in the wooded land of western Gaul, early in the ninth century. Besides the little *seigneurie* of Ebbon and Eremberge already described, there were four *manses*. One after another they were given to Saint Germain-des-Prés, by individuals whom we are fully entitled to regard not as cultivators but as overlords of the soil drawing dues from it. The monks joined them to the *seigneurie* of the married couple, and the whole, by an agreement with Eremberge who was probably by that time a widow, became a single seigniorial estate, held from the Abbey as a *precarium*. It would not be difficult to point out traces of a similar concentration elsewhere, in Domesday Book for instance.

If we are to form a just notion of the odd juridical medley that might exist on some estates, we must take into account, besides the holdings dependent on different lords, those that had no lord at all. The survival of these independent islands, their fields mixed up with those of adjacent tenancies, was apparently in no way opposed to the existence of a very ancient system of rural chiefdoms as attested by place-names. It was certainly not without good reason that, at some point in Gallo-Roman history, the inhabitants or the neighbours of the village of Florac in the Bordelais had got into the habit of calling it the village, the land, the estate of Florus. Yet at the very end of the Middle Ages peasant *alleux*

were still to be found there. And this instance is quoted at random from among a crowd of others.

In order to try to understand what may have happened in such cases, the best way without doubt is to examine one of the rare countries in Europe where we can watch, at a date which makes it visible, the birth of a central village authority. Friesland, we know, was for centuries a land without lords. However, from the fourteenth century, we can see rising above free communities the authority of chiefs, *Hauptlinge*. They were strong enough, especially in the east of the country, to force peasants, who were called their subjects (*Undersaten*) and whom in return they undertook to protect, to work for them, to fight for them, and to obey the rulings of their courts. But these new dynasties did not, in general, manage to create true *seigneuries*; at most, as their latest historian puts it, only 'amorphous' ones. Neither the economic nor the political conditions were favourable to the strengthening of such local authorities from that time forward. But we have here evidently at least in embryo an institution which, under more favourable conditions, might have grown from chiefdom into *seigneurie* proper. Now two points deserve to be especially borne in mind. Most of these potential *seigneurs* appear to have been simply peasants richer than the rest, and—more important still—men who had managed to surround themselves with armed followers, living with them in fortified manor houses. Secondly, their most appropriate name, and that which in fact contemporaries usually gave them, was not so much chief of a village as chief in a village. For in many places several families of their type had sprung up, and it was only in course of time that occasionally—but not always—the most powerful stock managed to get rid of its rivals. We may well suppose that many genuine *seigneuries*, far back in time, had no other source than some such differentiation of wealth and strength, in short a lordship *de facto* which by gradual mutation became a lordship *de jure*. And as it was simply a member of a group who, rising above the crowd, received first one man's submission and then that of another, you might have in a single community several such chiefs, with independent families surviving beside them. No doubt that was not the story of all seigniorial villages. There were mass submissions too; but neither were they the only sort. When we read in the *Fors de Bigorre*, about 1110, that the right to control the use of the village boar should belong to the 'best knight' of the place—that is the one whose family was strongest, richest, or most respected—we can hardly fail to recall Friesland with its little communities divided by tradition among their several rustic potentates.

Whatever their origins, and the more we knew about them, the more varied we should probably find them, these village chiefdoms of early days were still far enough from the genuine *seigneurie*. It is in Romance countries that they can most clearly be seen acquiring the true seigniorial character, but only very gradually.

Roman domination, in its early years, would seem to have worked in two ways. The abundance of servile labour that conquest supplied, and the confiscations of land, helped rich men to build up directly cultivated demesnes on a much larger scale than before. The slaves formed a much greater part of the rural population, and great *latifundia* were sprinkled among the peasant holdings. As for the groups dependent on village chiefs—in their case it seems we must distinguish rather sharply between the position in Italy and that in the rest of *Romania*. In spite of the vast areas cultivated by slave gangs, there was no lack of farmer or tenant groups on Italian soil. But everything suggests that they were less widespread there than elsewhere. The slow and harsh conquests, the Social Wars, the work of colonisation, the rearrangements of property, must have destroyed the power of many a little local Italian dynasty. However that may be, it is certain, in any case, that the numerous small independent cultivators, whose existence in Italy imperial sources prove, appear still more clearly in early medieval records—the records of that very general practice of the temporary lease of land, the *livello*, which, as has been seen, was essentially different from the hereditary tenure which prevailed beyond the Alps. In the Provinces, on the other hand, the establishment of a scientific tax system—a thing Italy, as is well known, had long lacked—helped to stiffen relationships hitherto no doubt rather lax. Subordinate tenancies were not entered in the tax books under headings, they were all included under one *fundus*, the complex estate of the local magnate. It was probably at this time that so many old Gaulish villages, entered under the Roman or Romanised name of the magnate of the day, were rebaptised for ever. Every system of land taxation aims at simplicity, and in almost every civilisation, when a new authority has introduced such a system, the effect has been to make more rigorous any half-developed relationships of peasant subjection that may have existed already; in British India, for example, early in the nineteenth century, and in Irak in our own day. Later, the colonate tightened the peasants' bonds again; the simple dependant, whose land, far from being a fragment detached from a greater estate, had been known within the memory of man to belong to the patrimony of his family, was easily confused with the farmer who held his by a recent grant. The magnates who appear in the funeral bas-reliefs of Igelou or Neumagen receiving offerings and dues from their tenants had already the air of *seigneurs*.

But the great fact that, from about the second century, would give the *seigneurie* very nearly its final form was the decline of slavery. Its action would be felt beyond the Roman era; and then it would be operative even outside the Romanised world. The decline would not have been so important had there not previously been formed the great demesnes cultivated directly by their owners. We have seen how these *latifundia* were partially cut up into servile holdings, but only partially. Even if complete cutting up had been desired, there would not have been slaves

enough to occupy the whole of such vast areas. Unless the land was to tumble down into waste, new sources of labour supply had to be found. They were found in the services of dependent peasants. Services had not been unknown in the old colonate. But they had been a much less serious burden than the dues in money or in kind. As the inscriptions of the African *saltus* show, they were hardly used except at the peak points of the agricultural year—ploughing, weeding, harvest—and, being thus cut down to a few days a year, their main use was to limit that of hired labour at these critical moments, although some such labour was occasionally needed. It is significant that classical jurists when discussing the letting of land never mention services. It is probable that under the later Empire many more began to be demanded, sometimes quite illegally. In one of his homilies, St John Chrysostom appears to refer to such demands,⁹ and one cannot but suspect—the sources do not justify any certainty—that they may have been in part responsible for the terrible *jacqueries* of this period. The lord's demands certainly continued and became more urgent after the invasions. The laws of the Alemanni and the Bavarians have preserved for us the main part of a law from the first half of the seventh century which regulated the obligations of ecclesiastical *coloni*. Comparing this law with the information that we get from the Carolingian surveys of two centuries later, we see clearly a heavy increase in the labour services demanded from free *manses*. Near Paris, the *polyptyque* of Saint Maur-des-Fossés, compiled in the ninth century, seems to contain a memory of the introduction into one of its villages of services previously unknown there.¹⁰ Such an increase of burdens was, beyond question, incompatible with the custom which, since the Roman era, regulated strictly—as both codes and inscriptions prove—the relation of landlord and tenant, within each *fundus*, *praedium* or *κτημα*. These customs were certainly maintained and respected by the courts of the barbarian kings. But there were many ways of getting round them. Sometimes the public powers interpreted them very loosely: in spite of the protests of royal and ecclesiastical *coloni*, a capitulary of Charles the Bald did not hesitate to include some entirely new tasks—one of them at least, marling, clearly presented as a recent technical innovation—under the heading of legitimate obligations. Simple abuses of power, leading to the establishment of precedents, were probably even more important. And pressure on the weak was freely disguised, as usual, under pious phrases about ‘prayer’. The lord's *corvée* itself, in Romance countries, gets its name from this disguise (*corrogata*: the service ‘collectively craved’). That did not make it less harsh; and no doubt when kings denounced the oppression of the poor, as they so often did, they had in mind, among other things, these burdens that were being imposed without any kind of justification in ancient custom.

⁹ *Hom. in Math.*, 61, 3 (Migne, P. G. vol. xviii, col. 5911)

¹⁰ Guérard, *Polyptyque*, n. 287, c. 16

Yet from that time forward new factors in the situation favoured the imposition of still more burdens. As a natural consequence of that widespread insecurity which replaced the *Pax Romana*, in many places a concentration of homesteads can be noticed during the early medieval centuries. This obviously encouraged seigniorial control and the use of labour services. Above all, the general establishment of personal commendation and the usurpation of public rights—mainly those of justice and of *ban*—strengthened the lord's grip, and enabled him to extend it to holdings which had hitherto escaped him.

Thus behind the classic *seigneurie* our enquiry reveals long and obscure beginnings. A very ancient structure of rural chiefdoms was the essential nucleus, and about it the centuries deposited their successive layers one by one. Then the economic conditions of the early Roman era created the great demesnes facing the family holdings of dependants. The conditions of the late Roman era and of the early Middle Ages led to the coexistence, and subsequently the fusion, of *manses* cultivated by 'free' tenants with the new servile holdings, and, above all, linked the demesne to the holdings, of whatever type, by heavy bonds of service. Finally, the institutions of the feudal age gave the *seigneurie*, always aggressive, its finishing touches as a disciplined group whose members were harshly exploited. And yet the rural community had always retained a great measure of collective action under its chiefs. To the system thus slowly built up by one deposit after another Western and Central Europe owed some of the most significant aspects of its civilisation, especially during the Middle Ages. In societies where there were hardly any slaves, and in which the only property that really mattered was property in land, nothing but this system of dependent agriculture could have kept alive the military and clerical aristocracies, or even monasticism itself. The Blessed Raimon Lüll, in his *Book of the Order of Chivalry*, once expressed with brutal frankness what appeared in his day to be a necessary part of the divine plan: 'it is seemly that the men should plough and dig and work hard in order that the earth may yield the fruits from which the knight and his horse will live; and that the knight, who rides and does a lord's work, should get his wealth from the things on which his men are to spend much toil and fatigue.'¹¹

¹¹ Raimon Lüll, *Libro de la orden de Caballeria*, ed. J. R. de Luanco, 1, 9.

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Peasant Life and Rural Conditions

From THE CAMBRIDGE MEDIEVAL HISTORY, Volume VII, Chapter XXIV, Pages 716-750. Cambridge: UNIVERSITY PRESS, 1932.

Peasant Life And Rural Conditions

(c. 1110 to c. 1500)

The student of medieval social and economic history who commits himself to a generalisation is digging a pit into which he will later assuredly fall, and nowhere does the pit yawn deeper than in the realm of rural history. It is of the nature of trade to overflow the bounds of geography and race, but the rustic world is a local world; it does what sun and soil demand and it is ruled by a custom which may vary from one village to the next. There is little enough in common between the daily lives of the wandering shepherds of Spain, Apulia, and the Carpathians, the vine-growers of the Rhineland and Bordelais, the men who tended seed gardens round Erfurt, the toiling plowmen of the English midlands, the Flemings draining their sea marshes, and the pioneers beyond the Elbe. Moreover, rural society was in a state of flux during the centuries to be considered here (roughly from 1100 to 1500). Estates were coalescing and breaking up, towns were rising, land was being brought under cultivation or becoming exhausted, the population was growing, men were struggling out of serfdom or falling into it, new forms of landholding were being evolved; and all this was happening unevenly in different parts of Europe. It is necessary, therefore, to consider first the chief differences in the local framework and then the changes, which were slowly metamorphosing the rural world during the last four centuries of the Middle Ages, before any general picture of village life can be attempted.

The peasant's existence was unrolled in a double framework, the work in part of nature and in part of man. The geographical lie of the land, the climate, and the dominant occupation forced upon the district by these facts largely dictated the type of settlement, the field systems, even the personal status of the peasantry. For the organisation of estate and manor, and the complicated personal and tenurial relations between lords and peasants, which formed the artificial framework of rural life, were profoundly modified by the physical framework into which they were fitted, and elaborate historical explanations are sometimes given for differences which were simply due to geographical conditions. It is possible to observe certain economic equations which have a rough validity, despite the variations which race and history may introduce from place to place. Wide plains, which lend themselves readily to arable cultivation, usually lead to the clustered type of settlement known as the village, with houses lying together and open fields stretching round them. The home of the two and three field system is in country of this type, the south and centre of England, the great belt of north and north-eastern France, Ger-

many from the basin of the Seine and the Swiss Alps across to the plains of the Slavonic north-east, and over the Danish peninsula to the Scandinavian lowlands. It usually breeds big estates and a strong feudal system, for feudalism ever thrives best in cornlands; it breeds a peasantry which, though often economically very prosperous, is strongly bound to the soil, labour services are numerous and serfdom is tenacious. It is the country of the typical, one might almost call it the "textbook" manor, the main characteristics of which are too well known to need further description.

On the other hand, hilly country and pasture-farming lead to different types of settlement and different social conditions. The people live not in large villages or rural bourgs but in scattered hamlets or separate farms, for their flocks and herds are spread over a wide area and water is usually abundant. Labour services are much less numerous, and payments in kind are correspondingly more important, for generally speaking it is more convenient for the lord of a manor to take his profits in the form of labour in an arable district, where he has his own demesne farm to cultivate, and of produce or money in a pastoral district, since how shall he utilise week work from all his peasants on a sheep farm and what profession is more essentially skilled and permanent than the shepherd's? In these hilly pastoral lands, moreover, the feudal system in general and manorialism in particular are apt to be weak and serfdom is rarely onerous and disappears rapidly. In the most remote mountain districts, indeed, the peasants are often quite free; the lord exacts compulsory hospitality for himself and his servants when hunting or riding on business over these wild lands, but though such rights of *gîte* and *albergue* are sometimes oppressive and exacted by violence, they are more often rigidly fixed by custom and early commuted for rents. In general, the control of the lords is slight and in some parts, as for example in the high valleys of the Pyrenees, the villages are actually independent. The valley of Aspe, disputing with Gaston Phébus, Viscount of Béarn, declared that "the valley of Aspe was before the lord was and the lord has only that which they have given him"; and the lord never entered the valley without exacting two hostages for his personal safety. The Pyrenean villages were in practice little republics, governing themselves according to the custom of the valley, and making pastoral treaties with the men of other valleys on both slopes of the mountains. The peasants of certain Alpine valleys were equally independent, and in the later Middle Ages the term Swiss became a synonym for freedom. "We will be Switzers," cried the insurgent peasants at Spires in the great revolt of 1502.

Marsh and forest lands, which have to be drained or cleared for cultivation, and frontier lands which must be settled by pioneers, bring about yet another combination of circumstances. In many cases settlements in these newly reclaimed areas are planned in a sense that the old casual villages and hamlets were not. The *Waldbufen* in the forest districts of Germany and elsewhere and the *Merschhufen* in the Low Countries and

the marshes of the Weser and Elbe are long rectangular blocks, lying along the road as an axis and stretching to the edge of the forest or the dyke. Such villages, especially in the Eastern colonial areas where they were laid out by promoters, have an economical and logical ground-plan often suggestive on a small scale of a modern American town. Just as the conditions of reclamation and colonisation influenced the form of settlement, so they influenced methods of cultivation and social status. Individual cultivation was the rule in the fertile polders reclaimed from the sea along the Flemish coast, and *Waldbufen* and *Merschbufen* were usually enclosed, though in the colonial East the open field system was common. Moreover, from a social point of view reclaimed land and frontier land is free land. If freedom dwells in the mountains, she likewise flourishes in marsh and forest, because no man will bring them under cultivation save for an inducement and there are no inducements more potent than freedom and cheap land. The *hosti* who reclaim Brittany after the ravages of the Northmen, the settlers of the Jura plateau, the Flemings who drain their own flats and those of the colonial East, the wild clasmens of Ditzmarschen, the backwoodsmen and cowboys of the Eastern frontier, the Castilian *bebetrías* who settle the lands reconquered from the Moor and have the right to change their lord "up to seven times in one day," all are free, and even in areas where serfdom prevails the man who makes an assart holds it by free tenure, though the rest of his land be servile and he a bondsman by blood. Serfdom is unknown in colonial areas, except where an aboriginal population cultivates the land of an alien ruling class side by side with free alien settlers, or where occasional owners of frontier *latifundia* import a few serfs from home, or where serfdom arises by retrogression after the frontier period is over.

Finally, it should be observed that certain specialised crops are usually associated with small holdings, individual cultivation, and a free or mainly free peasantry. This is notably the case in the vine and olive-growing districts of the Mediterranean, and the reason is to be found in the fact that vine-tending is a skilled occupation and that wine is, in the main areas of its cultivation, produced for a wide market. The peasant can find a ready sale for his vintage and even small holdings are profitable; the lord, on the other hand, finds rent-paying tenants and wage labour better suited than cultivation by unfree labour to an estate run for profit. But when we speak of a market we introduce a factor which is historical rather than natural, and historical and racial as well as geographical factors must always be taken into account in analysing the development of a district. The historical factors which most profoundly modified the life of the rural districts were the growth of towns and the consequent extension of the trade in foodstuffs, for an exchange economy invariably brings with it agrarian specialisation and in the long run freedom. The growth of towns led to the increasing devotion of land in their neighbourhood to dairy farming and market gardening, to meet the demand of the town

population for food. The rise of industries led to the cultivation of certain industrial crops, such as the woad of Toulouse and the madder of Albi. More intensive farming and smaller individual holdings characterised such districts; and freedom came quickly to serfs in the vicinity of towns, which were the homes of free burgesses.

Thus the physical framework in which the medieval peasant passed his life, modified sometimes by racial and historical circumstances, conditioned not only his occupation but the kind of settlement in which he lived, his personal status, and his relations with his lord. The artificial framework of his existence was the institution known in England as the manor, the character of which was largely modified by geography. In general, a manor in a pastoral district consisted in rights over a large number of scattered homesteads and a heavy exactation of dues in kind, while a manor in an agricultural district usually contained a more or less large home-farm cultivated in part by the labour of servile tenants. The home-farm and the peasant tenures were bound together in a single economic system by these labour services and also by the fact that the lord, no less than the peasants, was subordinated to a common routine of cultivation in the open fields and bound to recognise rights of usage in the waste. The organisation of production differed. The lord of a single manor dwelt there and lived on the produce of his farm, the working of which he probably superintended himself. The lord of ten, fifty, or a hundred manors, had his seneschal to supervise his whole estate, and each of the manors was farmed by a bailiff, who sometimes lived at the manor house. The large landowner employed several methods of turning the produce of all these home-farms and peasant rents to his own use. Three in particular followed each other in rough chronological sequence, though they co-existed until a comparatively late date. These were the system of the travelling household, the system of delivering food rents from the different manors to a central place, and finally the much more convenient system of selling the surplus produce and delivering money instead of goods to the lord.

As to the status of the peasantry it may be said that at the beginning of the twelfth century the mass of them were serfs, though free tenants were to be found everywhere and in certain districts predominated, and there still existed, especially in the mountainous south of Europe, little pockets of *allodiers*, who owned no lord but their king. Serfdom, however, involved two different relationships, one of status and one of tenure, which were not necessarily concentrated upon a single lord. A man might be a serf by blood, handing down his serfdom to all his brood, the personal chattel of some body-lord (*Leibherr*). He might, again, be a servile tenant, holding his land by bondage tenure of a landlord (*Grundherr*), but personally free. He might be the bondsman of one lord and the bond-tenant of another. He might be a bondsman holding a piece of free land. There was, however, a tendency for the relationships of status and tenure to be combined and a tendency also to transfer servile obliga-

tions from the person of the bondsman to the land. When payments were thus first transferred and then fixed and deprived of the uncertainty which clung to status-payments, by reason of the lord's theoretical right to do what he would with his own, two steps had been taken on the road to freedom. Henceforth it was the *mansa* and not the man that was liable to tallage, the virgate and not the virgin that owed *leyrwite* for a slip from grace; and the land knew what it had to pay. The transference might, of course, be turned to the disadvantage of freemen, as in Germany in the later Middle Ages, when mere residence on certain land made a man a serf on the principle of *Luft macht Eigen*, and a revival of personal bondage took place, but in the early Middle Ages the transference of obligations from the person to the land was undoubtedly a step forward. Important as was the distinction between bond and free, it was, however, a legal and not an economic one. The bondsman might, economically speaking, be a prosperous small farmer employing labour, while the Freeman owned only a cottage and a croft and worked upon the bondsman's land. Moreover, it is exceedingly difficult to say which of the many dues and services to which the medieval peasant was subject were characteristically servile, for there is hardly one which was not somewhere paid by freemen as well as serfs. The serf was usually marked by his inability to move from his holding without his lord's permission, by his liability (in agricultural districts) to weekwork, by the payment of certain onerous dues on death and marriage, and sometimes also of a tallage which was theoretically arbitrary, though in practice usually fixed; while the Freeman held his land at a rent in money or in kind and was liable only to occasional boons and less onerous payments. But freemen as well as serfs are sometimes found subject to *mainmorte* or to the *maritagium*.

Apart from the various "bans" by which the lords forced their tenants (sometimes free as well as bond) to grind corn at their mill, bake bread in their oven, and press grapes in their winepress, the peasantry was subject to a whole series of regular and irregular payments. The regular annual payments included ground-rent, payment for the use of commons, and tallage; the irregular payments fell due on death, marriage, and inheritance, or when the land changed hands. In addition, there were labour services, which varied with the nature of the land, some being regular weekwork or taskwork, others "boons" performed at certain seasons. The serf was also burdened by special obligations which differed from place to place: in England, for example, he was often obliged to fold his sheep on the lord's acres for the sake of manure; in forest districts he had to do hunting services; in some parts he paid when he sold any of his livestock. All these payments had become fixed in the course of time, and although in theory the serf might own (as an Abbot of Burton once claimed) *nihil praeter ventrem*, in practice he enjoyed complete security of tenure while he paid his dues, and knew as exactly as the Freeman what those dues were, the lord's demands being more or less restricted by the custom of the manor. Occasional amenities softened the irksome-

ness of forced services; boonworks were frequently rewarded by an armful of the crop harvested and by a meal and, with the fall in the value of money, these "beanfeasts" came to cost the lord more than the services were worth. Still, taken all together, the dues and services to which the serfs of many manors were subject were exceedingly heavy. He who is disposed to idealise the medieval peasant's lot should study the list set forth in the famous *Conte des vilains de Verson* by the trouvère Estout de Goz in the middle of the thirteenth century, and borne out by the official extent of the revenues of the abbey of Mont-Saint-Michel at Verson and Bretteville, which Delisle has printed, or the customs of the bond-tenants of Darnell and Over, as recorded in the Ledger Book of Vale Royal Abbey in 1326.¹ It is not surprising that the serfs of both these abbeys were in revolt at the time.

Of the irregular payments to which the serf was subject the most bitterly resented were those which entered his inmost life and cast the shadow of a ravening hand over bridal bed and death-bed alike. The payment of the *maritagium* (*merchet, formariage, Bedemund*) was sometimes exacted only when marriage was contracted outside the manor, but it was everywhere one of the dues which serfs were most anxious to evade, for it was a check upon their freedom of movement. The payments for incontinence, such as the English *leyrwife* exacted from a serf when his daughter sinned, and the Catalonian *cugucia* which gave the lord the whole or part of the property of any peasant's wife guilty of adultery, were no less resented. Much more onerous, however, was the *mortuarium* (*beriot, mainmorte, Sterbfall, Buteil, Kurmude, Besthaupt*) which was also almost universal. In France it was usually exacted only when a serf died without heirs living with him in his household, but elsewhere it was payable whenever a tenant died. A study of the different forms taken by the *Sterbfall* as recorded in the German *Weistumer*, or village "dooms," provides some entertaining reading and a very strong impression of the burdensomeness of the tax. In some places it was levied on the capital value of the holding, and often amounted to as much as a third, sometimes even to a half. More often it was the best beast and best suit of clothes which a man possessed; if he had no son his weapons and sometimes his sharpened tools were taken, leaving the widow only a chopper to cut her wood. A woman owed her best dress and kerchief which she had been wont to wear on Sundays or at market, and her marriage bed, unless she left an unmarried daughter, who was allowed to keep it. Occasionally the husband was permitted to retain the bed as long as he remained unmarried, but if he took a second wife the lord's steward might go and drag it out of the back door, while the peasant brought in his bride at the front, leaving her (like Anne Hathaway) with the second-best bed. When it is remembered that the Church also exacted

¹ See Delisle, *Études sur la condition de la classe agricole...en Normandie au moyen âge*, pp. 668-90; *Ledger Book of Vale Royal Abbey*, ed. J. Brownbill (Lancs. and Cheshire Rec. Soc.), pp. 31-42, 117-22.

its mortuary from the dead parishioner, taking the second-best beast and garment after the lord had taken the best, it is small wonder that the moralists of the age sometimes (but all too rarely) turned in disgust from lord and priest feeding like vultures on the poor man's corpse

Mention of the ecclesiastical mortuary calls attention to another aspect of the question of peasant dues. These were not payable solely to his lord. As a parishioner he owed the Church not only the irregular mortuary, but regular annual tithes, which were a heavy burden, though they often in the course of time fell into the hands of the landlord and merely added another item to the rent. But besides these payments the peasants on many parts of the Continent owed dues and allegiance to a third type of lord beside the *Leibherr* and *Grundherr*. Sometimes it was the lord's suzerain, sometimes a *Gerichtsherr*, who acquired jurisdictional rights over a territory and was responsible for its protection and for the public peace. This type of lord is not found in England, but on the Continent, particularly on ecclesiastical estates where the landlords were unable themselves to provide military protection, the *Vogt* or *Avoué* was an almost universal phenomenon. In theory his business was protection. "If a villager asks for the support of the *Vogt*," says the custom of Nieder-Ranspach in Alsace, "the *Vogt* ought to come to his help so speedily that if he have but one foot shod he should take the other boot in his hand and fly to the defence of right." At Neuillers the serfs of St Peter had the right to emigrate to Dossenheim and "if on the road a wheel came off their cart, the *Vogt* ought to dismount and give them bodily aid." In return, the people of the villages over which he exercised his authority attended his court and gave him and his suite hospitality when it was held. But the exactions of the *Vogt* grew both in France and Germany, the maintenance claim developed into a regular tax (the *Vogtbete*), he took his share in death and succession dues and exacted his corvée from the people. In both countries Vogtei taxes were often heavier than those due to the landlord, and as a rule they fell on free as well as on bond. Moreover, free peasants were also liable to State taxes, which grew steadily as the centuries advanced, though they were sometimes merged with the *Vogtbete*. Inama-Sternegg calculated that in Germany towards the end of the Middle Ages the fourfold payment of rent to the landowner, ecclesiastical tithe, Vogtei dues, and State taxes amounted on an average to two-thirds of the gross product of the land, he works out the case of a free leaseholder paying an annual rent of one-third of his produce (not the worst form of lease), which shews that the ground rent amounted to 33.4%, the tithe to 6.6%, the Vogtei dues to 20% and the territorial tax to 4%, making a total of 64%, not counting labour dues, irregular payments such as the marriage and death dues, and fines, which probably raised his annual rent by another 5%.

It has already been stated that throughout the Middle Ages changes

were at work in the countryside; but at certain periods the process was accelerated, and the twelfth and thirteenth centuries are pre-eminently one of these periods of hastened change. Three movements in particular affected the life of the rural districts: the rise of towns, the impetus to clearance and colonisation, and the disintegration of the manor. All were connected with a still more fundamental economic movement, the growth of the population.

The steady growth of the population shewed itself in a number of ways. One was the rise of towns, which was marked all over Western Europe. To take Germany alone, the researches of Puschel, based upon a study of town walls, streets, and buildings as well as upon written records, have shewn that the old German towns of the West became too small for their inhabitants in the course of the eleventh century, grew very rapidly during the twelfth and thirteenth, and usually stopped growing some time in the fourteenth, from which time their area in most cases sufficed for their inhabitants until the nineteenth century². Such a phenomenon speaks eloquently of a crowded countryside, for the town population was obviously being fed by immigration from outside, and it is significant that the period of growth coincides with the period when the colonisation movement of the German people beyond the Elbe was most active. In the countryside the increase shewed itself in the subdivision of holdings, in a steady rise in land values, and in the carrying of cultivation as far as the technical knowledge of the time allowed, even to land from which the economic return was poor and which sometimes had to be abandoned later in the Middle Ages. Checked though it was by famines and pestilences, this upward movement of the population continued and is at the bottom of most of the economic changes of the time.

The growth of towns, one of its most important manifestations, inevitably reacted upon conditions in the surrounding countryside, for the town looked to the country to provide it with population, with food, and with some at least of the commodities of its export trade. It was to its interest to attract the more enterprising members of the peasant class within its walls, and it was easy to do so, since town air, as the proverb ran, made a man free. But besides the tendency thus set up for a flow of population from the country into the towns, they had a far-reaching effect upon the organisation of the countryside itself, for manorial lords found it increasingly expedient to supersede travelling households and food rents by the sale of their surplus produce in the market for cash. This fact provides a key to the nature of manorial economy during the central period of the Middle Ages. It was not, as it has often been represented, a closed economy, a kind of subsistence farming, aiming only at self-sufficiency. Marx's epigram that the walls of his stomach set the limits to the lord's exploitation of his peasantry rests upon a misconception. The acquisition of landed property by lay and ecclesiastical lords

² See A. Puschel, *Das Anwachsen der deutschen Städte in der Zeit der mittelalterlichen Colonisation* (Berlin, 1910), *passim*.

went far beyond the limits necessary for self-support, and landownership was organised for profit at a very early date. An international trade in certain agrarian products (notably in corn, wine, and wool) was already in existence in the Dark Ages; in the twelfth and thirteenth centuries it was active and brought great profits to landowners as well as to merchants. The same chapter in the *Rules of St Robert* (c. 1240), which bids the Countess of Lincoln travel with her household from place to place, adds, "so arrange your sojourns that the place at your departure shall not remain in debt, but something may remain on the manor, whereby the manor can raise money from increase of stock and especially cows and sheep, until your stock acquit your wine, robes, wax, and all your wardrobe," and proceeds to give details as to the sale of wool. Nor was it only in the pastoral districts that English manors were profit-making concerns. Almost every manor in the corn-growing areas sold its surplus grain in the market, and that grain came from the peasants' holdings as well as from the demesne farm, a regular market organisation was developing early in the twelfth century, and well-defined market areas may be detected in the thirteenth. England was a land of comparatively small towns; the effect of this evolution upon the countryside was even more marked in those parts of the Continent where town life was more highly developed. Everywhere towns were a magnet for the peasant who wanted to leave the land and a market for the peasant who remained upon it.

No less far-reaching than the rise of towns was the effect of another and simultaneous movement. At the beginning of the period a large part of the soil of Europe was still uncultivated and uninhabited, sodden with marsh and fen or overgrown with forests. A steady work of drainage and colonisation had been going on piecemeal during the Dark Ages, but in the eleventh century it was pushed forward with new vigour. Nowhere was it more active than in the Low Countries, where the Counts of Flanders, the great abbeys, lay landowners, and peasants all combined to stem the encroachments of the sea along the coast, drain the marshes of the Lower Scheldt and Meuse, and bring the heaths of Brabant and Hainault under cultivation. In maritime Flanders associations called *wateringues* were formed to organise the control of the dykes and water channels. All the way from Flanders to Frisia they built up a wall against the sea and behind it cultivated a long line of fertile polders, where fat cattle grazed. In the thirteenth century the towns took a leading share in the work, and many polders to this day bear the names of the capitalist "undertakers" who drained them in that age of activity. A similar work of reclamation was going on in other countries, and harsh were the penalties on the man who failed to do his part in maintaining the defences against the invading waters. In one district in Germany it was laid down that if a man barked one of the willows which held the dykes together, "his belly shall be ripped up and his bowels taken out and wound round the harm he has done, and if he can get over that the willow

also can get over it " An equally energetic war was also waged against heath and forest, indeed, the attack on the forests was so relentless that towards the end of the Middle Ages rulers and landowners and sometimes the peasant communities themselves were obliged to make regulations for their protection. In this work of reclaiming the soil of Europe due credit must be given to the monastic houses, which had both the capital to undertake large-scale operations and the intelligence to supervise them An additional motive came in the twelfth century, when the newly-founded Cistercian and Promonstratensian Orders deliberately settled in wild and savage places, far from the haunts of man, and slowly brought them under cultivation. The Cistercians in particular were great sheep and cattle farmers

The work of reclamation was thus going on steadily in Europe throughout the Middle Ages, but for the Western nations it was a question of settling and bringing under cultivation land within their own national boundaries. With Germany it was different. The Germans were the colonising people *par excellence* of the Middle Ages, not merely on account of their intrinsic industry and enterprise (which were great), but because they alone of West-European nations had a movable frontier to the East. In character and achievement the eastward expansion of the German people over the Slav lands has aptly been compared with the westward expansion of the American people from Atlantic seaboard to Pacific, with the Slav in the rôle of the Red Indian, many centuries earlier, it passed through the same stages and bred the same types Its fundamental cause was the growth of the population in old Germany, and the first stirrings of a new activity came early in the twelfth century After Adolf of Holstein's conquest of the Wagri in 1142, Helmold, whose *Chronica Slavorum* is the epic of the Saxon frontiersman, tells how he sent into the Low Countries, Westphalia, and Frisia, for settlers and how "there rose up an innumerable multitude of divers nationalities and they took with them their households and all their possessions and came into the country of the Wagri " The Wendish Crusade of 1147 was followed by a similar rush of settlers to the East, "with horses and oxen, with ploughs and wains and labourers fit for the work," which in places was a true mass emigration. At a later date (towards the end of the thirteenth century) German peasant settlers began to follow the Teutonic Knights into Prussia. Nor was the movement only across the Saale and the Elbe, for colonists also pressed into Poland and Silesia, Bohemia, Austria, and parts of Hungary ³

³ It must be borne in mind that a great deal of this colonisation was not a mass immigration from outside, but "internal colonisation," carried on by the original population This seems to have been notably the case in Bohemia, Moravia, and Silesia, where Germans were living side by side with the Slavs long before the twelfth century The established view as to the colonisation and Germanisation of Mecklenburg in the thirteenth century has recently been attacked by a Russian scholar Egorov, who argues, on the basis of detailed researches, that the office of the *locator* was unknown there, and that there was no policy of Germanisation but simply internal colonisation and reclamation carried on mainly by the local Slavonic lords and peasants (See D. N Egorov, *Kolonizatsiya Meklenburga v xiii v* 2 vols Moscow, 1915)

The chief colonising peoples of Germany were the Saxons and Bavarians, but a remarkable part was also played in the movement by peasants from Flanders and Holland. Their readiness to transport themselves so far from home was doubtless due to the over-population of the Low Countries and partly perhaps to the fact that they were weary of their incessant struggle with the ravenous ocean, "a people", as Helmold said, "who bear the brunt of the sea." They sought to find a better land in the East, and the often-quoted ballad, "Naer Oostland willen wy ryden," may well enshrine the spirit in which they went. Their hereditary capacity for drainage and irrigation alike made them particularly valuable colonists in marsh and heath lands, and the lords and bishops of the East were anxious to obtain them as settlers. Gradually Dutch and Flemings reclaimed the marshlands of the Weser, Elbe, Havel, and even of the Oder and Vistula, taking their own law with them, sometimes even (as at Bitterfeld and Juterbog) using a special coinage, *moneta nova Flamin-gorum Jutrebo*, and leaving an indelible mark on place-names and on the architecture of barn and farmhouse. The Cistercians imported them into the morasses of the Thuringian basin, where under the leadership of the monks of Walkenried they reclaimed the famous Goldene Aue. They were even to be found in the mountainous south, scattered here and there as far as Transylvania.

It may well be wondered how these treks of colonists from West to East were managed, how they knew where to go, and who laid out their villages, for the business clearly needed organisation. The most common method was the employment by landowners of a *locator*, or professional agent, who was given a commission to settle a piece of unoccupied land. He would lay it out in large rectangular blocks of 125 acres or more, then set off westward to gather his colonists and bring them back with him, planting each family upon one of these big holdings, the "manses of Dutch measurement" referred to in so many charters, and setting aside one for the church and one for himself as *Bauermeister*. Each colonist paid a small premium in cash, but as a rule lived rent-free for a period of four to sixteen years while engaged in the work of reclamation, after which he paid an annual rent. They held by free hereditary tenure and usually brought with them their own law, "German law" or "Dutch law" as the case might be, and this law was spread through the East, and the villages of the aboriginal Wends and Poles and Prussians were sometimes assimilated to it. It is easy to see what an attraction the cheap land and freedom of these Eastern countries were to the more energetic peasants of the over-crowded and servile West, indeed, the colonisation movement, like the rise of towns, promoted emancipation at home, since the lords of old Germany were obliged to improve conditions lest their peasants should flee to the frontier. The *locator* was well paid for his work; he often received a holding rent-free in perpetuity in each village settled, and became the *Bauermeister* or *Schulze*, that is to say, the judicial and

administrative head of the village, taking as a rule two-thirds of the fines in the village court (the other third going to the lord), and having the right to keep the village tavern and other privileges.

The rise of towns and the colonial movement were perhaps the most far-reaching economic events of the twelfth and thirteenth centuries and were closely connected with a third change at work during the period, the slow disintegration of the manor, which substituted for demesne farming a totally different method of exploiting landed property for profit. The lord cultivating his home-farm in part by means of labour services under the direction of a bailiff became a landlord, living upon rents and cultivating his home-farm (if he retained one at all) entirely with the help of hired wage-earners. The process was accompanied by a marked change in the proportion of land in demesne and land in the hands of peasant farmers, the former shrinking steadily at the expense of the latter, and by the steady emancipation of the peasantry.

It has already been shewn that the nature of the dominant economy brought about this change at an earlier date in some parts of Europe than in others. It appeared first in places where the demesne farm was small or labour services unimportant (as in pastoral districts), or where specialised crops (such as vines) were being grown for an international market, or where uncultivated land was leased on easy terms for purposes of reclamation. The spread of the system into the big corn-growing areas which were the main strongholds of manorialism was due to the economic revolution which was taking place during the twelfth and thirteenth centuries. On the one hand, the market for manorial produce was growing steadily and putting money into the pockets of the peasantry, and on the other, the towns and the colonial East were offering an asylum to discontented serfs. The lords tried to stem the increasing number of flights by repressive measures, concluding treaties among each other against the reception of runaways, or incorporating a clause to the same effect in town charters; but the tide was too strong, and in order to keep their peasants at home they had in the end to emancipate, to lighten burdens, and to commute labour services. Sometimes the process went on piecemeal by the emancipation of individuals, but there was an increasing number of regional emancipations, notably in the vicinity of towns. In Italy the freeing of the peasantry was one of the chief weapons of the cities in their struggle with the landed nobility, and in parts of France there was a tendency to form bourgs and villages into rural communes, with charters modelled on those of some town in the vicinity, the charters of Lorris and Beaumont, for instance, had a great vogue. Emancipation usually but not always carried with it the abolition of the more deeply resented servile disabilities, such as the *mortuarium* and the *maritagium*. From the point of view of manorial organisation the most interesting phenomenon was the disappearance of servile tenure and in particular of labour services. The process went on very unevenly in different parts of

Europe, but in the end the result was everywhere much the same. The lords went over wholesale to the rental system, serfs were transformed into customary tenants, paying a fixed annual quit-rent, and more and more free leaseholders appeared. The leases were of an infinite variety as to conditions and terms, some hereditary, some for life, some for shorter periods. The main types were two: by the one the tenant paid an unvarying rent, usually in money, by the other (*mitayage*, *mezzadria*) he paid a proportion of his harvest or stock in kind. In the long run *mitayage*, which was common in the Mediterranean countries, paid the landlord best, for though he shared his tenant's loss in a bad year, the price of land was rising and a fixed quit-rent or a long lease worked in favour of the tenant. At the same time, there was also an increase in the number of free proprietors who were able to buy their land outright, and especially in the South of Europe a considerable part of the soil began to pass into the hands of the peasants.

It must not be supposed that this process of emancipation accomplished itself swiftly or evenly throughout Europe. In France, for instance, serfdom was strongest in the east, in Lorraine and Franche Comté, parts of Burgundy, Berry, and Nivernais, where it lasted until the fifteenth century, and in some parts until the eighteenth, in the Midi, a mountainous land of small properties, it was never strongly rooted, and most of the serfs of Provence and Languedoc had disappeared by the end of the thirteenth century; in the west it was weaker still and Normandy, Brittany, and Poitou were almost entirely free by the end of the eleventh. Serfdom came to an end early in Flanders and Italy largely on account of the prevalence of towns. In England it was always less prevalent in the north and west than in the south and east, where the process of emancipation was not complete until the end of the Middle Ages. In Spain feudalism was never firmly rooted except in Catalonia; in Leon and Castile the need for population (as the reconquest proceeded) and the protection of the towns had brought about an almost complete emancipation of the serfs during the thirteenth century, in Catalonia, on the other hand, a very heavy form of serfdom prevailed and was only brought to an end in the course of the fifteenth century. In Germany serfdom decreased most rapidly in the north-west (Lower Saxony and Westphalia) and in the Rhineland, but it was still to be found there at the end of the Middle Ages and was even more prevalent in the south-west, while it was actually increasing in the once free east in the fifteenth century, for reasons which will be explained later.

The change to a rental system meant something more than the spread of personal emancipation and an alteration in the terms on which the mass of the peasantry held their land. It did not, of course, preclude the lord from continuing to exploit his home-farm himself, with the help of hired instead of villein labour, but nevertheless the tendency grew for him to retire to a great extent, if not altogether, from the management

of his demesne. This would rarely happen in the case of a small knight living on a single manor, but it became increasingly common on large estates where bailiff farming prevailed. On such estates the lords began to lease their demesne farms, now piecemeal, now *en bloc*. Even big stock farms were let out. In the thirteenth century the Earls of Lincoln had vaccaries in the Forest of Rossendale, which they managed themselves through local bailiffs supervised by a chief Instaurator, but in the course of the fourteenth century the new owners of the Honour of Clitheroe gradually abandoned their personal interest in cattle-raising and let out the farms to farmers. Many monastic stock-farms on the Continent were similarly leased instead of being directly cultivated by lay brothers or hired servants. This practice of "farming the demesne" was more subversive of the old manorial system than was the practice of letting out the tenant's holdings at a money rent. Sometimes the farmers were the whole community of tenants, sometimes two or three rich peasants, sometimes the bailiff or the reeve, sometimes a speculator from outside. It is interesting to observe the part played in the process in certain parts of Europe by the lord's bailiff (*villicus, Meier, maire*). In Lower Saxony in the eleventh and twelfth centuries the Meiers began to try to convert their position from an office into a tenure by making it hereditary, and they made use of the prevalent practice of exacting a produce rent from each manor to appropriate the surplus yield, and sometimes more than the surplus, to their own use. In the course of time the Meier often became *de facto* a leaseholder of the demesne, and the lords, making the best of the situation, began to separate the demesne farm from the rest of the manor and let it out by the same relatively free form of tenure (*Meierrecht*), at the same time converting the dues and services of the peasants into money payments or making them over to the Vogt. The next stage came when the lords began to throw together peasants' holdings into larger blocks and let these out in *Meierrecht* also. This created a number of cottagers and landless men, but the Meiers (many of whom had thus no connexion with that office) formed a class of free leaseholders who were the most prosperous peasants of Northern Saxony and whose life tenure steadily tended to become hereditary. In France a similar process began, and from the twelfth century many *mairies* were hereditary and an important feudal property, but the process never went so far as in Saxony, nor had it the same repercussion upon peasant tenure.

Thus throughout Europe a metamorphosis was gradually taking place in the exploitation of land ownership. The change was not entirely a beneficial one from the point of view of agriculture, for the large estates had often been pioneers of progress, and they could introduce improvements and undertake works of drainage and reclamation on a large scale, which were beyond the means of the peasant. It was the great landowners who studied the treatises on agriculture which had come down from classical times, and it was they for whom new works on the same

model were drawn up, based in part upon Cato, Varro, Columella, or Palladius and in part upon practical experience. Such works are the famous thirteenth-century English group which comprises Walter of Henley's *Husbandry*, the *Rules* of Robert Grosseteste, and two anonymous treatises on *Husbandry* and *Seneschaucie*; such too the *Opus Ruralium* of Petrus Crescentius of Bologna (1230-1307) and the delightful handbook for shepherds called *Le Bon Berger* written at the request of the King of France in 1379 by Jehan de Brie. In the exchange economy of the day, moreover, the new system must have been responsible for the great increase in the number of middlemen in rural areas, always a necessity for the small owner. The French or Rhenish monastery of old could employ its own *negotiator* to sell its wine and its own boats to freight the produce of its manors to port or market; the big English landlord could sell his wool wholesale to Lombard or Flemish merchants. But such organisation was beyond the small farmer. The dealer in agrarian produce had appeared at an early date (as town regulations against forestalling and regrating shew), but the growth of tenant farming at the expense of demesne farming inevitably paved the way for that multiplication of corn-bodgers, wool-broggers, and other middlemen, decried as caterpillars of the commonwealth by sixteenth-century moralists, who failed to understand that they were now not merely convenient but essential.

The dissolution of the old manorial organisation and the emancipation that went with it were accompanied by a marked improvement in the position of the peasantry. Probably at no time in the Middle ages was agriculture more flourishing and the mass of the rural classes better off than during the twelfth and thirteenth centuries. Brunetto Latini speaks of the open manor houses of the Île de France, surrounded by gardens and orchards and a peaceful countryside, and Froissart in the next century admires the rich Cotentin, so soon to be desolated by war: "si trouvèrent le pays gras et plentureux de toutes choses, les granges pleines de blé, les maisons pleines de toutes richesses, riches bourgeois, chars, charrettes et chevaux, pourceaux, brebis, moutons et les plus beaux boeufs du monde que on nourrit en ce pays."⁴ The prosperity of the French peasantry appears occasionally in the literature of the time, as in Bertran de Born's savage *sirvente* against the rich peasant, and in those pictures of well-to-do *vilains* with wide lands which occur in certain of the *fabliaux*. German literature throws an even more favourable light on the prosperity of the peasantry of that country in the thirteenth century. It is the age of the satirical peasant-epic *Meier Helmbrecht*, of the charming tale *Der Arme Heinrich*, and of the school of courtly *Dorfpoesie*, which is best represented by Neidhart von Reuenthal and Seifried Helbling. Neidhart shews the well-to-do Bavarian and Austrian peasants aping the gentry, village dandies with spices in their pockets for scent and pomade in their long curling locks, wearing silk-lined caps and coats of fine foreign

⁴ Froissart, *Chroniques*, Lib. I, Ch. cclxviii (1346).

cloth and carrying swords at their sides and clinking spurs at their heels, as though they were knights.

The causes of this rural prosperity must be sought elsewhere than in the progress of emancipation, which was only one of its symptoms. It was due in part to favourable external conditions. It is true that famine and pestilence took their toll as of old, but the latter at least was less deadly in the earlier centuries than the great series of visitations of bubonic plague which began with the Black Death (1347-49). The peasantry suffered considerably from time to time from war; the misery of England under Stephen and of Italy during the struggle between Frederick II and the Pope was great, and the crusading movement brought with it the harrying of the humble and backward Slav peasants in Eastern Europe and of the prosperous and enlightened Moorish peasants of Spain, as well as the terrible devastation of Languedoc in the Albigensian Crusade. Still the loss of Slav and Moor was the gain of German and Castilian peasants, and Languedoc at least rapidly recovered its prosperity. In general, the Crusades diverted fighting energy away from the Western peasantry, and there was nothing during this period as serious for them as some of the struggles of the Dark Ages or as the long horror of the Hundred Years' War. Moreover, it has already been shewn that the rise of the towns and the needs of reclamation, especially in the East, were during these centuries providing an outlet for the surplus population and raising both the status and the income of the rural classes as a whole. But there were yet more fundamental movements at work on the peasants' behalf. Between the tenth and thirteenth centuries the growth of the population, the development of *défrichement* and of agricultural technique, and the rise in price of agrarian produce increased the economic rent of the soil to a very considerable extent. Lamprecht has calculated that land in the Rhine and Mosel districts was worth at the end of this period about seventeen times what it had been worth at the beginning, but the old customary rents remained the same, with the result that something like four-fifths of the unearned increment was going into the peasant's pocket. At the same time the purchasing power of money was steadily falling during the same period, and wherever payments were fixed in money the peasant benefited by this too. It is these facts which account for the shipwreck of large-scale demesne farming in the twelfth and thirteenth centuries, and for the desperate straits of so many of the great abbeys; they explain also the readiness of the lords to sell emancipation and the ability of the peasants to buy it.

The advance of the rural classes was not, however, everywhere maintained during the later Middle Ages. In France the Hundred Years' War undid a great deal of the benefit gained and some of the most fertile lands in Europe were reduced to the utmost misery, a prey alike to *routiers* and wolves. The wretched people whom Louis XI saw, as he rode from the prosperous Flemish countryside through the half-deserted fields

of his own land, seemed to him gaunt and emaciated as though they had just emerged from dungeons, and Fortescue's celebrated comparison of the French and English peasants draws a similar picture. It was only after the middle of the fifteenth century that the work of clearance and agricultural improvement could begin again in France, and in many places lords let their lands to peasants on terms as favourable as in the early days of *défrichement* and settlement, and for the same reason. In Germany, again, the rise of the small territorial States on the ruins of the Holy Roman Empire was far from a blessing to the peasantry, which suffered (with all other classes) from their burdensome regulations and increased taxation. Moreover, the territorial rulers turned the *Gerichtsherrschaft* into an instrument of oppression, by everywhere using these jurisdictional lords as their representatives and by greatly extending the office. In Italy the peasantry, emancipated largely through the support of the towns in a common struggle against the landed nobility, often found that they had exchanged one bondage for another, and if the lords had chastised them with rods the burgesses chastised them with scorpions. For the city republics subordinated the countryside to their own interests. They invested their money in it; in the whole territory of Florence in the fourteenth century there was hardly a rood of land which was not owned by merchants, bankers, and even artisans. They strictly regulated agriculture, forcing labourers to work at fixed wages, insisting on leases on the *mezzadria* system, burdening the peasants with heavy taxation, and above all regulating the price and forbidding the export of agricultural produce in order to secure the food supply of the town, a policy which severely hit the small peasant proprietor. Refusals by peasants to pay not only public imposts but also private debts to town merchants became more and more common and flights once again became general, amounting sometimes to an exodus *en masse*. Everywhere in Europe, moreover, the town shewed itself an implacable enemy to the country in the matter of rural industry. In Flanders, where Bruges, Ghent, and Ypres sought, like the Italian cities, to dominate the countryside in the interests of their food supply, the townsmen made constant sorties to break the looms of the peasants; but both in Flanders and in England rural industry had triumphed by the end of the Middle Ages, though it was none the less subject to the economic control of capitalist clothiers.

But if the special circumstances of war, of State taxation and policy, or of urban interests worked in particular districts to the undoing of a peasantry whose prospects had seemed so bright in the thirteenth century, there were other and more fundamental conditions working in the same direction. In general the disintegration of the manor was a benefit to those classes which succeeded in keeping their hold upon the land. But all classes did not so succeed. That this is so, was due less to a breakdown of the old security of tenure in the framework of the manor than to the development of economic inequalities among the peasantry,

as the increasing market for agricultural produce offered opportunities for enterprise, and in some districts perhaps to a continued pressure of population. In some parts of Europe, it is true, the growth of the population (so striking during the twelfth and thirteenth centuries) was arrested and static, towns and deserted holdings bear witness to a relatively sparse population. In others the rapid *morcellement* of peasant farms seems due to something more than a mere redistribution, and suggests a still over-crowded countryside. It is possible that there would in any case have been an agrarian crisis in the later Middle Ages, apart altogether from the break-down of the manor, which merely dictated the particular form it assumed. That it was not more serious was due to the fact that from time to time pestilence and famine still acted as external checks upon the growth of the population, notably the Black Death of 1347-49, which, temporarily at least, gave rise to a severe under-population crisis throughout Western Europe.

In the countryside during the later Middle Ages two phenomena may be remarked, which were present within the manor from an early date, but which only assumed serious proportions towards the end of the thirteenth century. These were the steady subdivision of holdings and the rise of a class of landless labourers. The subdivision of holdings had been going on for a long time, but it had to some extent been held in check by the interest of the lords in maintaining their integrity as a basis for labour and other dues. It naturally went farthest in those regions where the customary law of inheritance allowed division among heirs, and it was watched with anxiety by the lords, who sometimes insisted on joint cultivation by all the heirs living under one roof, the eldest or youngest being responsible for all obligations on behalf of the rest (*ainesse*, *Tra-gerei*). The lords also tried to promote the practice of individual inheritance, whether by primogeniture or ultimogeniture, and in other cases limited the number and laid down the minimum size of subdivisions. But the tendency towards *morcellement* increased with the dissolution of the manor, which weakened the direct concern of the lord in the peasant holdings, and with the growth in the number of hereditary tenures, and a great deal of subdivision and even more subletting was taking place during the later Middle Ages. The process no doubt promoted the formation of a prosperous rural *bourgeoisie*; the rich peasants bought up tenures and increased their own holdings and in some places (as in Holstein and Jutland) they voluntarily adopted the principle of majority or minority succession, instead of division among heirs. But while the Kulak was thus as familiar in the medieval as in the modern Russian village, the other side of the process was the formation of a rural proletariat, which was already making its appearance by the end of the Middle Ages.

Cotters and wage-earners had been found from very early times upon the undissolved manor, where they were employed by lords and wealthy

tenants alike, and they were common in districts where the intensive cultivation of vines and other commercial crops brought with it an earlier recourse to wage labour. But the number of persons dependent on wages increased with the commutation of labour services, and the result was a new element in the social problem of the countryside. The main labour problem of the thirteenth century had been the question of serfdom, that of the fourteenth and fifteenth centuries was the modern question of free labour, its wages and conditions of employment; and the new employer was no less bent on controlling wage labour than the old lord had been bent on controlling his serfs. Everywhere there now appeared attempts to regulate rural labour, which became extremely vigorous when the Black Death, by temporarily depopulating the countryside, created such a scarcity as to give the wage-earners the whip hand. Wages rose to unprecedented heights and labourers left their employers and went wherever they were paid most. The landowners were in a difficult position, since flights of villeins (in those regions where villeinage still existed) were also frequent for the same reasons. The situation was met, both in France and England, by government legislation fixing wages, imposing severe penalties on those who gave or accepted more than the legal maximum, and forcing all who were not fully employed on their own land to take service. Similar wage tariffs were issued at different times by the Teutonic Order in Prussia and by the Italian cities. They gave rise to a long and bitter struggle, and in England the Statutes of Labourers were among the causes of the Peasants' Revolt of 1381. But the nature of the legislation must not be misunderstood. In Prussia (a country of big capitalist estates) and in Italy (where the land was in the hands of bourgeois capitalists) it was class legislation in the interests of landed capital against the wage-earners. But the position was not quite the same in England and France, where the people most severely hit by the rise in wages were not the big landowners but the small ones and above all the innumerable little peasant farmers who now employed hired labour.

The appearance of a large class of landless labourers and with it of an acute labour problem was not the only mark of deterioration in the position of the peasantry. In the course of the fifteenth century there appeared in Eastern Europe a manorial reaction, which brought about a recrudescence of serfdom in those parts, just as Western Europe was witnessing its final extinction. This reaction was the product of two movements working together. The first was the extension of the powers of the jurisdictional lord, or *Gerichtsherr*, to which reference has already been made. The second was the evolution of a new type of great estate, capitalistically organised for market production and worked by servile labour, but unlike the old manor by landless labour, production being concentrated on a demesne farm. This new type of estate (*Gutsbesitz*), which was most common east of the Elbe, thus differed essentially both from the old manor (*Villikation*), in which the land in demesne was usually

smaller than the land held by the peasants, and from the new *Grundherrschaft*, in which the landlord's profits were derived from rents and the market was fed almost entirely by the tenant farmers.

The spread of the *Gerichtsherrschaft* may be observed in most parts of Germany during the later Middle Ages, often taking the form of an extension of the powers and exactions of the Vogt. The demands of these jurisdictional lords upon their subjects became increasingly onerous and were often modelled on old servile dues; the universal exaction of the Vogt's hen, for example, was a recognition due based on the "bondage hen" paid by serfs to their personal lords. It was often easy to transform the control thus obtained over the peasantry into personal bondage, so tenuous was the line which separated the two relations. Such a transformation was easiest in places where the *Gerichtsberr* was also the *Grundberr*, and the peasant who was both his subject and his tenant could slip with tragic ease into the third relationship of dependence and become his bondsman, owning him as *Leibberr* too. Where the two lordships were distinct and often antagonistic the peasant had a better chance of maintaining his freedom. In western Germany the distinction was usually maintained, but in the east the landlord almost always possessed *Gerichtsherrschaft* as well, and the position of the peasantry was correspondingly worse. The whole movement was intensified by the hold which these jurisdictional lords began to get upon the waste, and the appearance or extension of all sorts of forest and hunting services as a result. The effect of this granting away of State functions to great lords was everywhere the same, a steady pressure upon the peasantry, which forced the landless class into personal bondage and too often amalgamated with them the less fortunate of the small proprietors. The new class of *Leibeigene* thus formed reached its lowest depths in the post-medieval period, but the process of decline was at work all through the fifteenth century.

The fate of the *Leibeigene* reacted on that of the remaining serfs of the old type and of the free leaseholders. The tendency to shift burdens from the person of the serf onto his land, which had once been a step in the process of emancipation, was now turned against the peasantry by the evolution of the doctrine of *Luft macht Eigen*, and in France too there came to be *mainmortable* districts in which every immigrant became subject to that due. Inheritance payments and burdensome dues which had long been dropped began to be exacted again. Landlords as well as Vogts increased their claims, and more precarious forms of tenure began to be substituted for those which had given security to the peasant leaseholder. The more fortunate retained their position as a prosperous rural middle class; but the mass of the peasantry became what they are so often called in the German literature of the fifteenth and sixteenth centuries, the *Arme Leute*, the poor folk.

The formation of the new territorial bondage and the depression of the peasantry went farthest in those trans-Elbian lands which in the first

period of colonisation had been essentially the home of free German settlers. Here the grant of jurisdictional and State powers over wide districts was usually made to the landowners, and those landowners were engaged in capitalistic farming on a large scale, which meant that they were in constant need of labour. From the very beginning in Prussia and other Eastern lands knights had held compact estates, side by side with the free German villages, but at first these estates were rather small and mostly engaged in cattle farming, so that their demand for labour was limited and could usually be met by employing the servile Slav villagers. There were, however, enough estates which did not contain such villagers to call into existence a class of landless labourers and small cotters, both Slav and German, called *Kossaths* in Prussia and Pomerania and *Gartner* in Silesia. From the fourteenth century corn-growing for export was becoming increasingly common and the estates or *Ritterguter* were growing greatly in size, and in the fifteenth century they were being increased by the purchase of peasant farms and the seizure of commons. The inevitable result was the appearance of an acute labour problem, especially in Prussia. Here there was a numerous class of free labourers, made up of the *Gartner*, the hired servants in husbandry, and a body of so-called *Austlobner*, or harvester, which was fed by the seasonal migration of Polish labourers. The wages of these workers were regulated by the tariff of the Order, and at the beginning of the fifteenth century the Grand Master was already fulminating against excessive wages paid in defiance of the rates. The Polish War of 1409-11 seriously depopulated the rural districts and the rise of towns had the same effect. The landed interests petitioned the Order to make agricultural labour compulsory upon "idlers who roam on the roads and in the towns," and a series of statutes was passed fixing penalties for the exaction or payment of more than the maximum rate; but the labour shortage continued and the wars of the end of the century caused still more depopulation, while the policy of the Polish government in finally fixing its peasants to the soil (1496) brought to an end the seasonal migration of *Austlobner* to get in the Prussian harvest.

The result of this growing shortage of labour was that increasingly throughout the fifteenth century the farmer-knights turned their attention to the free German peasants and sought to solve the labour problem by reducing them to serfdom. Restrictions were gradually introduced on freedom of movement: a tenant could not leave unless he provided someone else to farm his holding and obtained a document of quittance from his landlord; those who went without the document could be forced back, and the Order entered into treaties with neighbouring countries for their extradition in 1436, 1472, and 1481. The work of the big estates came to be done more and more by exacting labour services from the once free peasantry and by settling servile *Gartner*, and the German peasant was gradually forced into a bondage indistinguishable from that of the Slav. This development only, it is true, reached its climax in the sixteenth

and seventeenth centuries, but it had begun much sooner. Already in the fifteenth century the big corn-growing estates across the Elbe contrasted strongly with the rent-gathering estates of old Germany and the process of asservation was well on its way. It was generally characteristic of Prussia, Pomerania, Silesia, and Brandenburg and was to be found also in certain districts of Saxony, Brunswick, Hanover, and Thuringia. In England also, it may be observed, the *Gutsherrschaft* was making its appearance during the latter part of the fifteenth century, swallowing up peasant farms and engaging in large-scale production. But the English *Gutsherrschaft* was not, as in Prussia, a corn-growing estate but a sheep-farm which required little labour, and the problem to which it gave rise was not, therefore, a recrudescence of serfdom but a certain amount of depopulation and unemployment in the regions affected by the enclosure movement. In any case the dominant form of landownership in England remained the *Grundherrschaft*, and the chief cause of distress in sixteenth-century England was not enclosure but rack-renting and excessive entry fines.

The two factors mainly responsible for the recrudescence of serfdom and the depression of the peasantry in Eastern Europe were thus the extension of the powers of the *Gerichtsherr* and the appearance of a new type of capitalist estate. To these factors it has been usual to add a third, the adoption of Roman Law, which subjected the peasant, for generations ruled by local custom, to a strange law which he had no share in making and which tended to intensify the proprietorial rights of the landlord, particularly over the waste. In some parts the change to Roman Law did no doubt increase the distress of the peasantry, but the researches of von Below and Aubin have now shewn conclusively that this was not always and everywhere the case and that the Roman Law affected different classes and localities in different ways. In Lower Saxony and Westphalia, for example, the position of the peasantry suffered no decline and the new law contributed to the evolution of the *Meierrecht* from a free time-lease into a hereditary tenure which gave the maximum of security to the small farmer. In general there was probably little direct connexion between the adoption of Roman Law and the manorial reaction, which had already advanced far upon its way before the adoption became general.

Thus peasants of all classes had cause for discontent at different times and in different places, especially during the last two centuries of the Middle Ages. Some were prosperous, resented feudal oppression, and were fain to hasten the process of emancipation; others were driven desperate by war, or by wage regulations, or by the growing demands of Vogt or lord, or by the exactions of city usurers, or by the loss of commons. National, political, and religious discontents often reinforced their economic grievances and they sometimes found allies among other classes and powers, now making common cause with the towns against the rural nobility (as in Flanders and Italy), now with the nobility against

the towns (as in Wurtemberg and Baden), now with a native against a foreign landlord class (as in Bohemia and Denmark), now with the Crown against the Church and the nobles (as in Catalonia), now with industrial workers and poor priests against the bourgeois and ecclesiastical hierarchy (as in the English Peasants' Revolt). A few general peasant risings took place on the eve of the period under discussion, notably that of the Breton and Norman peasants at the beginning of the eleventh century and that of the Low Countries at the end, but on the whole the twelfth and thirteenth centuries were free of them. It was an age of increasing prosperity for the peasantry and emancipation was making steady progress. Risings were sporadic and local, and most of them seem to have been upon monastic lands, though whether this is due to the fact that monastic chroniclers naturally recorded disturbances on their own estates, or to any particular severity on the part of monastic lords, it is hard to say. There is some reason to believe that monasteries were conservative landlords, slow to grant freedom and exceedingly tenacious of their rights. Moreover, the combination of ecclesiastical and territorial rights in the hands of one lord, who took your best beast as a heriot and your second-best as a mortuary when you died and annually exacted his tithe as well as his rental from your fields, may well have made monastic landlords seem harsher than lay lords and concentrated a double resentment on their heads. The peasants who rose were often prosperous, some of them themselves employers of labour, and it is a commonplace that such revolts are usually the work of those to whom economic prosperity makes their servile status seem doubly irksome, or who are threatened with unaccustomed burdens, rather than of men sunk in the lowest stage of depression. The revolt of the peasants of maritime Flanders in 1322-28 is a case in point; they were both free and well-to-do, and rose against the attempt to force serfdom upon them, and they were successful. Similarly in England Froissart was not far wrong when he attributed the rebellion of 1381 to "the ease and riches that the common people were of."

It was not until after the middle of the fourteenth century that peasant risings became both frequent and general, sometimes assuming the proportions of a real "green revolution." The long series began with the Jacquerie in France (1358), which was caused by the ravages of war and the resentment of the peasantry against a nobility which not only loaded them with exactions, but could not even perform its own business successfully and clear the English from the land; for Poitiers had just been lost. The Peasants' Revolt in England (1381), perhaps the most interesting of all, was precipitated by an unfairly graduated poll-tax, but it united villeins who wanted the abolition of serfdom with free labourers who wanted the abolition of the Statutes of Labourers, and gradually drew into its scope every smouldering grievance of the working-classes in town and country alike. It was suppressed with far less violence than had been shewn by the French nobles after the Jacquerie, probably because the

peasants had been guilty of few excesses, and it had little effect upon the disappearance of villeinage. In Spain the method of revolt was more successful: the serfs of Upper Catalonia rose three times between 1395 and 1471 and finally won their freedom with the assistance of the Crown; in Majorca, on the other hand, four insurrections were directed between 1351 and 1477 against the town capitalists who had concentrated the bulk of the rural property in their hands, and were unsuccessful. In Scandinavia the free peasants of Sweden rose in 1437-40, as those of maritime Flanders had done a century previously, to prevent themselves from being reduced to serfdom, and were successful; but three great revolts in Denmark between 1340 and 1441 only increased the hold of the German aristocracy upon the peasantry. All these risings were to culminate in the slow-gathering resentment of the German peasant in the grip of the feudal reaction. The long struggle of the peasants of the Kempten estates against their Prince-Abbot began in 1423; there were risings in Saxony, Silesia, Brandenburg, and the Rhineland in 1432, and (as Dr Coulton has pointed out) at least eleven serious revolts in various parts of Germany during the thirty years before Luther's appearance in 1517. The great Peasants' Revolt of 1524 was only the climax of a long movement.

The effervescence in the rural world was accompanied by the appearance of a new spirit in the countryside, something of more universal significance than the old revolt against burdensome dues and services. This new spirit, half religious and half socialistic, is very marked in the English Peasants' Revolt and in some of the German movements. Dreams of a reform of the Church were in the heads of English peasants in 1381, long before Hussite and German revolts linked agrarian discontent with the nascent Reformation. Moreover the peasant himself began to be idealised and his figure to take on a kind of mystic significance. Men quoted the words of the Psalmist, *Labores manuum tuarum quia manducabis beatus es*, and of Christ Himself, *Pater meus agricola*. It was labourer and not priest who was the type of holiness, whose sweat quenched hell fire and washed the soul clean. The remarkable English poem of *Piers Plowman* sounds a new note in medieval literature. No less marked was the growing class consciousness of the peasantry and the rise of egalitarian and socialistic doctrines. The German peasants marched with the wooden *Bundschuh* for their banner and the English repeated a doggerel couplet:

When Adam delved and Eve span
Who was then the gentleman?

Froissart's description of the preaching of the wandering priest John Ball in the villages is a *locus classicus* in the history of the democratic movement:

Ah, ye good people, the matters goeth not well to pass in England, nor shall not do till everything be common and that there be no villains nor gentlemen, but that we may all be united together, and that the lords be no greater masters than we be. What have we deserved or why should we be kept thus in servage? We be all come from one father and one mother, Adam and Eve; whereby can they say or shew that they be greater lords than we be, saving by that they cause us to win and labour for that they dispend? They are clothed in velvet

and camlet furred with grise and we be vested with poor cloth: they have their wines, spices, and good bread and we have the rye, the bran, and the straw, and drink water: they dwell in fair houses and we have the pain and travail, rain and wind in the fields; and by that that cometh of our labours they keep and maintain their estates. We be called their bondmen and without we do readily them service, we be beaten; and we have no sovereign to whom we may complain, nor that will hear us nor do us right.

Froissart, lover of chivalry and hanger-on of princes, had no sympathy for what he was reporting, but its tremendous import comes through him, in spite of himself, and all the clash of arms in his chronicle cannot hide that ominous note, the clatter of the *Bundschuh* on the road to freedom.

It is perhaps an inevitable result of the fact that economic history has been to such a great extent written by legal historians that the medieval peasant is usually considered primarily in relation to his lord. The profusion of manorial documents and the fact that all we know of medieval farming is concerned (save by implication) with demesne farming, have led to the same result. Yet the peasant was not only the inhabitant of a manor (and the manorial hold over him was often loose enough); he was a villager, the member of a community with a close and active life of its own. It was this village community which made rules for the common routine of husbandry, into which lord no less than tenant had to fit. Occasionally its regulations for such matters as the harvest are found enrolled upon court rolls; more often there have survived its customary rules for the use of forest and waste; and these are of great interest where there was an intercommoning of several vills over the same land, and often a *Markgenossenschaft*, with its own officials elected by the constituent villages to enforce the agreed regulations. The lords steadily encroached upon these organisations in the course of time, but they played an important part in rural life and many of their regulations may be read in the German *Weistümer*.

The religious, the social, the family life of the villager all elude the historian who confines his attention to estate books and manorial documents, save in so far as court rolls throw their light on his less reputable moments, his often sanguinary feuds and hues and cries, his burglaries, and his daughter's peccadilloes. But there is ample other material from which to reconstruct it. Contemporary literature is rich in pictures of village life. What a familiar collection of types—*mutatis mutandis* still to be found in the countryside—is assembled in the thirteenth-century French *lai*, which prefaces "a rhymed octosyllabic curse" of peculiar force and comprehensiveness with a description of the twenty-three types of *vilains* to be stricken by it. There is the headman who announces feast days under the elm tree in front of the church, and the pious villagers who sit with the clerks and turn over the book of hours for them and who carry the cross and the holy water in procession. There is the surly vine-dresser who will not point out the way to travellers; and the grumbler, who sits before his cottage-door on Sundays and mocks the passers-by, and if he sees a gentleman coming along with a hawk on his

wrist, he says, "Ho, that screech-owl will get a hen to eat to-night that would have given my children their bellyful"; and there is the embittered fellow who hates God, Holy Church, and the gentry. There is the accommodating ass (*Vilain Asnin*) who carries the cakes and wine to the feast and if the weather is fine he carries his wife's cloak too, but if it is wet he strips himself to his breeches and covers her up. There is the country bumpkin, who goes to Paris and stands in front of Notre Dame, gaping up at the kings and saying, "Look, there's Pepin! There's Charlemagne!" while a pickpocket cuts his purse behind. There is the village leader, who speaks for the others to the bailiff and says, "Sir, in my grandfather's and great-grandfather's time, our cows used to go in that meadow and our sheep in that copse," and so gains a hundred sous for the villeins. There are also the miser; and the poacher who leaves his work at morn and eve to steal his lord's conies; and the "cowled vilain, that is the poor married clerk who goes to work with the other vilains", and the wood-gatherer, who brings his load in backwards because his cottage-door is so low; and the marl-spreader, who upsets the last cartload over himself, "and he lies there and does not trouble the graveyard." Finally, there is "Vilain Graft, to wit he that taketh a gentlewoman to wife, even as a garden pear is grafted on a wild pear tree, or a cabbage, or a turnip," a witness to the fact that in France at least rich peasants occasionally married above them. Similar pictures are to be found in the *fabliaux* and they abound, likewise, in German and English literature. Meier Helmbrecht's family; Chaucer's "povre widwe somdel stope in age," in whose yard dwelt Chantecler and Pertelote, that incomparable pair; the village taverns in *Piers Plowman* and *The Tunnyng of Elynour Rummynge* (genre pictures as robust and redolent of the soil as Breughel's paintings); all these linger in the memory. Langland's great epic, indeed, is a whole gallery of peasant types, from the labourers who deigned not to dine on bacon and last night's vegetables, but must have hot fried fish, to "the wo of these women that wonyeth in cotes" and the poor man's pride that will not let his neighbours see his need. This last passage—too well known for quotation—is equalled in pathos only by the poignant vignette in *Pierce the Plowman's Crede* which shews the poor peasant and his wife plowing, with their little babe in a crumb-bowl at the end of the acre, and two-year-old twins tumbling beside it, all crying one cry "a careful note." One is reminded of the sentence, so significant and so devoid of sympathy, in Pelagius' *De Planctu Ecclesiae* where he sets forth, among the sins of the peasant folk, that "they often abstain from knowing their own wives lest children should be born, fearing that they could not bring up so many, under pretext of poverty."

Another particularly valuable source of evidence for medieval village life, in its non-manorial aspects, is to be found in certain ecclesiastical documents, more particularly in those dealing with the parochial visitations, which took place from time to time. Records of several of such

visitations have survived, notably those of four Norman parishes made by the Abbot of Cerisy's Official in the fourteenth century and those made by the Archdeacon of Josas in the Île de France between 1458 and 1470, both of which are particularly valuable in covering a number of consecutive years. The picture which they give of village life with its immorality and violence and dilapidation is a sombre one, and has sometimes been ascribed in part to the effect of the Hundred Years' War upon the countryside. That effect is, indeed, marked in the Josas series, a picture of desolation relieved only by the care with which, in place after place, the people are made to elect a village midwife, who is then sworn and licensed by the archdeacon. Nevertheless the general impression derived from those Cerisy visitations which belong to the period before the war is not very different from that derived from the later reports, although it is undeniably less gloomy, and there is much in common between both the Cerisy and the Josas series and the reports of the visitations of the diocese of Hereford in 1397, which have recently come to light.

These Hereford returns give a picture of English village life which is unsurpassed by that to be obtained from any other class of record. Here parish after parish is unrolled, with its superstitions, manners, morals, its village quarrels and its relations with the church. It is the border country, where Welsh and English mingle and occasionally the parson does not understand the language of his flock, as they complain. They are, indeed, nothing loath to complain of their parson if they have anything against him. The vicar of Eardisley is at feud with the whole parish; he has failed to supply a parish clerk, and his two maid-servants ring the bells and help him in the celebration of Mass, and his relations with them are gravely suspect; several men have died without the last sacrament by his default, and when he was burying one John Boly in the churchyard, he said publicly in the hearing of those present, "Lie you there, excommunicate!" He refuses to give the sacrament at Easter to the labourers of the parish, unless they agree with him for a tithe of their wages, and would not absolve a certain woman after confession unless she gave him 12*d.* towards the repair of the church books, so that she went into Hereford to get herself shiven. The church is befouled with flax and hemp, and he is a common trader in corn and other goods and a usurer. *Differuntur omnia contravencia Vicarii sub spe concordie*, runs a note in the Register; but the hope seems faint. Even when Hodge had no complaint against his parson, he was not a particularly devout son of the Church. He grumbled over mortuaries and tithes, tried to evade his turn to provide the *panis benedictus*, and was reported for not coming to church on Sundays or for working in the fields on holy days. Nevertheless the church was obviously the centre of village life. There the people went to be christened, married, and buried. They might or might not learn something of the truths of religion from their priest, but they got a rough familiarity with the lives of the saints and with the Bible from

statue or storied capital or from wall-paintings, St Christopher opposite the door to befriend the traveller, the Last Judgment over the chancel, and the Virgin in her lady chapel at the side. Nor did the people only use the church for their devotions; they were apt to do their buying and selling in the porch, and the priest himself sometimes stored and even threshed his grain there. The churchyard, too, was a convenient open space for village festivities. This was well and good if a miracle play came round, which might be considered edifying, but the fairs which grew up round the churches were apt to encroach on the churchyards, to the wrath of ecclesiastical authorities, and sometimes the people came there for dances and revels.

One thing is certain, whether pious or not, the villagers, like country people in all parts of the world, were exceedingly superstitious and ready believers in charms and ghosts and witches. The *Poenitentiale* of Bartholomew Iscanus, Bishop of Exeter (1161-84), sets forth a list of such village superstitions⁵: Whosoever has prepared a table with three knives for the service of the fairies, that they may predestinate good to such as are born in the house, whosoever shall pollute New Year's Day by magic enquiries into the future; whosoever, labouring in wool or otherwise, shall lay spells thereon that the work may prosper, or who shall forbid the carrying away of fire or aught else from his house, lest the young of his beasts perish; whosoever shall cast into his barn or cellar a bow or any plaything soever wherewith "the devils called fairies" should play that they may bring greater plenty; whosoever shall believe that a man or woman may be changed into shape of a wolf or other beast; whosoever shall spy out the footsteps of Christian folk, believing that they may be bewitched by cutting away the turf whereon they have trodden. Many other superstitions are set forth, and readers of medieval *exempla* will remember too the peasant women who steal the consecrated Host, to sprinkle it among their cabbages or in their beehives as a charm against disease.

It is from the villages, one feels sure, that there come those tales of marvels which find their way into medieval chronicles. They smack of the rustics on the alehouse bench, or under the haystack at midday, or warming themselves around the fire at night. Villages in the West Country, where the Celtic strain was strong, were particularly prone to such tales, and many of them are collected in that most enchanting of books, Walter Map's *De Nugis Curialium*, where may be read the story of the man who married a fairy and others full of a graceful imagination not always found in folk tales. The villages of the diocese of Hereford visited in 1397 were full of the same superstitions and not even the priests were always blameless. John the chaplain, say the villagers of Kilpeck, "seemeth to them by no means firm in the faith, for he hath oftentimes

⁵ Printed in *Reliquiae Antiquae*, ed. T. Wright and J. O. Halliwell, i, 285, and translated in *Laws in the Middle Ages*, ed. G. G. Coulton, i, 33-5.

conjured by night with familiar spirits" (*fecit pompam suam tempore nocturno cum spiritis fantasticis*). There is even a ghost: "the parishioners [of Shrawardine] say that a certain Nicholas Cutler of Ruwardyne (*sic*) on his father's death publicly put it about that his father walked by night in the aforesaid parish and he watched at his father's tomb one night, to the great scandal of the Catholic Church." A group of really admirable village ghost stories comes from Yorkshire, where a monk of Byland Abbey wrote them down about the year 1400. The best tells of the man who was camped with a group of pilgrims beside a lonely road at night, and suddenly heard a neighing and screaming and galloping in the air and saw to his horror all the last year's dead coming hell-for-leather down the road towards him riding upon their mortuaries, horses, cows, and sheep, a motley and grisly crew, with his own abortive and unchristened infant rolling along the ground in an old stocking in which his wife had buried it.⁶ The Hereford visitations shew us witches too. Amice Daniel useth sorcery in Cradley, and in Bromyard Alison Brown so practises that when she puts her curse on a man God forthwith visits vengeance upon him, which (say the villagers) is against the Catholic faith and tempting the Lord, and what can be expected of a woman who sells her hemp inside the church itself?

In general, however, the witch was much less unpopular than the village usurer, that still universal figure in rural society, from the gombeen-man of Ireland to the bániyah of India. The small farmer is often hard up just before he gets in his harvest (when Langland shews the peasants tightening their belts and living on poor fare), or if the crops are bad, or if storm and flood destroy his little possessions; and to tide him over hard times he must borrow. In the Middle Ages the Church, of course, strictly forbade usury, but the rich neighbour who lent would not lend for nothing: so the peasants used him and hated him and when there was a visitation hurried to accuse him. Thus the villagers of Dymock say "that Henry Cece is a common usurer, viz. he lent to a certain Jak atte Hull 12s., the which he received back in full together with four bushels of wheat for the delay and he lent Proserpine Wele 10s. and received from her three bushels." Sometimes it was the parish priest himself who lent out money at interest to his flock. At Yazor "Sir Thomas, vicar there, lent a certain Gylm of Erdeshope 40d. and took by way of usury twelve pullets; the same lent to him 20d. and received in usury two pounds of oats." The village of Church Stoke (Montgomery) was full of usurers, and Jevan ap David ap Joris had lent Madoc ap David 15s. at 5s. per annum and had already received 30s. in this way.

A particularly vivid picture of German peasant life is to be found in the *Weistümer*, or customs drawn up in the village courts, mostly during the period when manorial organisation was breaking up and the lords

⁶ These Yorkshire ghost stories have been edited by the Provost of Eton; see *Twelve Medieval Ghost-stories*, ed. M. R. James, EHR, xxxvii (1922), pp. 413-23.

were anxious to preserve their rights against the inroads of the peasants, they reflect a changing world and sometimes represent more than one stage of evolution. In these documents peasant speech is preserved and peasant life mirrored more clearly perhaps than in the custumals of any other country, they have a perfectly distinctive note, an atmosphere (as Professor Levett has observed) of Grimm's fairy tales which is unmistakable, if only for the part played in them by animals. Here is the steward of the Provost of St Alban's at Basle receiving the rent at Brattellen. "Heshall come there, and after sunset when the night falls and the stars begin to shine he shall sit under the open sky and thus wait for the tenants to bring their rent. If they be slow and pay not promptly, he may rise and go into the inn and whosoever is behindhand and maketh not payment at the place where the steward sat, he owes twice as much next day and four times as much if he delay a day and a night, so let all be warned and pay their rent before they go to bed." But in other places the steward must fetch the rent and the peasant pays it "over his hedge," and the rent-hen must be sought "so softly and quietly that the child is not waked in the cradle, nor the cock frightened on the perch." This matter of rents and payments is one that calls for care. The hen due to the lord must be lively enough to fly "from the ground to the ladder, from the ladder to the manger, and from the manger to the roost", the cheese "of such a hardness that if it be thrown against a wall it rebounds without breaking", and if the Meier of Hengwiller suspects the quality of a grain rent, "let him take his stand at the door by which the swineherd passes and spread some of the corn on the ground, when a sow with seven piglings after her stops and eats thereof the Meier must be content, when the sow passes without stopping the villager must provide corn of a better quality." The sow, one feels, was probably on the tenant's side, and other definitions in his interest are found, such as that which bids the lord of Bischholz be content with the wine grown by his tenants, even if it be so sour that it would corrode a horse's hoof, and directs that the cartload of wood gathered for the Count of Stolberg at Born be so loosely packed "that a hare could run through with his ears erect."

The records are full of Gargantuan feasts. When the men of Huningue take a boat-load of wine down the river to Basle, the provost serves them with food and drink, and "they shall be made to drink so well that they can only stagger back to the boat"; and when wine has been carried by villagers on the estates of a Schwarzwald monastery, they are to be regaled with some of it until "no two men can carry the third to bed." The foresters of Colmar, on their Martinmas inspection of the Waltmark, pass the night with the Abbot of Münster, "and he shall give them two kinds of bread, two kinds of wine (white and red), and a new tablecloth, and the loaves must be of such a size that when they set them on end upon their feet, the foresters can cut enough above the knee to glut themselves, and on their departure they can make a parcel of the cloth

nd the fragments and take the lot, unless the abbot pay them five hillings instead. When night falls, straw shall be strewn for them round he fire and a minstrel shall be sent to play them to sleep on the viol. A servant must keep watch over the clothes, lest the fire harm them, if he sleepers burn in front it is their affair, if they burn behind they shall receive compensation. When the foresters take leave of the abbot in the morning he shall cause each of them to be given a pair of new shoes and they shall go on and breakfast at the manor house of Wihr " Here too we find the kindness which remits the shrovetide hen to the pregnant wifewoman and makes her husband shew up its head, to be sure she has dined off it, or allows her to fish for herself in the lord's brook; but also the cruelty which lays down that the man who has removed his neighbour's landmark shall be buried up to his chin in the place where it stood, and the field plowed by a plough and four oxen, "and the buried man may help himself as best he can."

The peasants with whose life and work this chapter has been concerned have been those who formed the vast majority of medieval farmers and labourers, sedentary persons living in their villages, hamlets, or separate farms. It is true that the medieval peasant was much less sedentary than is sometimes been supposed. Under the food-rent system, carrying services often obliged the villein to travel far beyond the confines of his native village. The man whose lord owned but a single manor probably remained there and saw but a hundred or two hundred faces in all his life, yet not so the tenants of St Paul's carrying their food-rents from Essex up to London, the bondsmen of Darnell doing carriage with sack and pack throughout Cheshire, or the men of Huningue taking wine for the Meier of Ystein by boat down the Rhine to Basle. It is an interesting reflection that for a large part of the peasantry the growth of a money economy, the commutation of labour services, and the restriction of demesne farming probably made travel less rather than more frequent and considerably restricted their horizon. They had now only to take their rent up to the manor house and carry their produce to market, or wait until the travelling middleman collected it. Economically they were tied to the soil, if legally they were free; save for the congenital wanderer, compulsory travel came to an end with serfdom. In many places, too, manorial custom permitted the serf to live off the manor on payment of a fine, *traités de parcours* between lords provided for the intermarriage of their respective serfs, and in some parts of France the unfree peasant possessed the right of *évasion*, allowing him to leave his tenement on giving his lord notice and abandoning his goods. The records of the time shew that apart from the movement thus legitimised there were constant flights, and the steady recruitment of the towns from the countryside, to say nothing of the great mass emigrations of German and Flemish pioneers to the Eastern frontier, bears witness to a considerable mobility. Indeed the immobile medieval

peasant, like the self-sufficing medieval manor, is something of a myth. It is interesting that in Wittenweiler's poem *Der Ring*, written by a fifteenth-century Bavarian satirist, a peasant enumerating the ten points of good education puts first that his boy should serve God and second that he should visit a foreign land.

Certain classes of rural workers, moreover, were forced by the nature of their work to be nomads, wandering from place to place. The seasonal harvest workers who migrated from Poland into Prussia, or came down from Wales and the north of England to gather in the harvest in the agricultural midlands, are cases in point. But more interesting and more truly nomadic were the migrant shepherds who drove their great flocks of sheep every year from summer pasture in the mountains to winter pasture in the plains. This regular seasonal migration, which is usually known by the name of *transhumance*, has taken place from very early times in lands where changes of climate are extreme and where there exists a combination of low-lying plains, too dry to support flocks and herds in summer, with high mountain pastures, which are under snow in winter. The practice is found in a modified degree in many hilly districts. It was carried on in Scotland and Wales and even in parts of England, where a Bishop of Lichfield and Coventry in the early thirteenth century laid down that the tithes of wool taken by churches in his diocese were to be divided "if the sheep be fed in one place in winter and another place in summer." In many of the Alpine valleys the peasants had a more or less permanent winter settlement in the valley, where their few cultivated fields were situated, but moved to summer huts in the mountains when the snow melted. In others they were more nomadic still, owning only temporary dwellings and moving from fief to fief with their sheep, so that in one charter, hailing from the Briançonnais district, it was laid down that a man who passed Christmas Day on a lord's land was to be held that lord's man for a year.

The home of transhumance proper, however, is in the Mediterranean region, where from an early period it has been characteristic of Spain, southern France, south-eastern Italy and the Roman Campagna, and northern Greece. The most remarkable example of the industry is certainly provided by Spain. Spanish wool had a great reputation in the Middle Ages, being considered second only to the fine Cotswold wool of England, and the merino sheep became the pivot of Spanish economic life. It has been calculated that the total number of sheep on the move in Spain at the close of the Middle Ages (1477) was over two and a half millions. They travelled very long distances along the *cañadas* or sheepwalks, the flocks from Leon often going 350 to 450 miles from their summer to their winter pastures; nor were Spanish sheep the only animals upon the road, for the ordinances of the town league of Daroca deal with "French, Gascon, Basque, and foreign herdsmen" coming from the South of France over the Pyrenees and down the Ebro valley to winter in southern Aragon. By the end of October all the flocks were in their winter camps in the sunny

lowland plains and the lambing season began soon after their arrival. They stayed there until the middle of April and then began to depart. The sheep-shearing was done in sheds along the way, by clippers working in gangs of 125, each of which clipped a thousand sheep a day. The wool was either sold at once or stored in central warehouses, the chief of which was at Segovia, and then dispatched to the great fairs or to the ports. By the end of May the sheep were back in their home pastures in the northern uplands. The shepherds, who were a much favoured class in Castilian society, were engaged for the year, beginning on St John the Baptist's Day (24 June), and were paid, usually in kind, at the close of a year's service. In the middle of the fourteenth century the legal wage was 12 bushels of grain, one-fifth of the lambs born during the year, one-seventh of the cheese produced, and six maravedis in coin for every hundred sheep under the care of the shepherd, who was also allowed to keep a certain number of his own sheep free of charge with his master's flock.

Wherever it existed on a large scale, migratory sheep-farming had certain common characteristics. The routes followed by the flocks were fixed and the pasturages were communally owned. In southern Italy and Spain they were mainly Crown lands, but the Provençal flocks, whether they migrated westward into the Pyrenees or eastward into the Alps, had to depend mainly on the common lands of the upland valleys, the use of which they obtained by agreements with the lords concerned or with the virtually independent mountain villages. In one village in upper Dauphiné the people say in 1354 that sheep from Provence have long frequented the Alpine heights above them, and when one of the nomad shepherds falls ill, the curé of their village goes up to him in the mountains and gives him the sacraments, and if he die the villagers fetch down his body at their own cost and bury him in their graveyard. But the transhumants were never as welcome to the people as to their lords, for the lords profited by the taxes which the visitors paid, while the local inhabitants sometimes suffered from over-crowded pastures. These local taxes levied on the passing flocks, under different names (*pulvérage* in Provence, *carnal* in the Pyrenees, *montazgo* and *montadigo* in Spain and Portugal), are an early and important form of the taxation of movables, and out of them there developed in the Spanish kingdoms and in southern Italy a system of taxation by the central government which led to the protection of flocks and maintenance of highways by the State and to the development of an elaborate machinery of administration. Another common characteristic of the migratory sheep industry is the deep-rooted antagonism to which it gave birth, between the sedentary husbandman of the plain and the nomadic herdsman who passed through his lands. The shepherds were everywhere blamed for deforestation and the ruin of husbandry, and all sorts of regulations were laid down to protect the latter. At the end of the twelfth century, when the Castilian kings granted wide privileges for

sheep migrations, the flocks were forbidden to trespass upon the "five forbidden things," to wit, pastures reserved for local animals, cornfields, vineyards, orchards, and mown meadows, though they were occasionally allowed to graze on the stubble after harvest. The hostility of the settled town and village dwellers often took the form of oppressive taxation and the formation of leagues of towns to protect themselves against transhumants.

These characteristics of the migratory sheep industry had two interesting consequences. In certain districts, notably in southern Italy and Spain, they led to the appointment of special itinerant officials and judges, whose business it was to protect the interests of the flocks. More important still, the need to deal with common routes, common taxes, and a common hostility brought about the organisation of great protective associations among the sheep-owners themselves. Of these associations the most famous was the Castilian Mesta, which by the end of the Middle Ages completely dominated the economic organisation of Spain and ultimately proved fatal to Spanish agriculture. The Mesta was first definitely organised as a single national association by Alfonso the Learned in 1273. It had some two or three thousand members, mostly small men driving their own sheep, though a few owners of big flocks, like the Duke of Béjar and the monastery of Escorial, belonged to it. Its meetings were held three times a year, and were attended as a rule by two hundred or three hundred owners, women often being present and having full rights. At these meetings the duties and behaviour of the shepherds were regulated, negotiations were carried on with towns over local taxes and with the Crown over privileges, and in general the migrations were organised and the interests of members protected. There were similar associations in Aragon and Apulia⁷.

Such were the main features of peasant life and rural conditions during the last four centuries of the Middle Ages. From his contemporaries, or at least from those whose opinions have come down to us, the peasant received but little appreciation. Clerkly writers scorned him, and he was the butt of many half-proverbial rhymes and epigrams. "Servi qui non timent, tument"; "rustica gens optima flens, pessima gaudens"; "oignez vilain, il vous poindra, poignez vilain il vous oindra"; "Knechte schlagen wenn sie nicht zagen"; "Der Bauer ist an Ochsen statt, nur dass er keine Horner hat." Very few are the writers who suggest that villein is as villein

⁷ For sheep-farming in Spain, see the admirable work of J. Klein, *The Mesta. A study in Spanish economic history, 1273-1836* (Cambridge, Mass., 1920), to which I am much indebted. An excellent account of transhumance in the French Alps will be found in T. Schlafert, *Le Haut Dauphiné au moyen âge* (Paris, 1926). Both books contain valuable bibliographies.

does, and express any sympathy for the hard lot of those who labour in the fields:

Cil endurent les grefs tormenz,
Les nefz, les pluyes è les venz;
Cist ovrent la terre od lur mains,
Od granz mesaines e od fains;
Icist r'ont assez aspire vie,
Povre, soffratoise è mendie
Senz cest ordre, senz cest gent,
Ne sai mie com faitement
Li autre peussent durer

It is not until the later Middle Ages that there appears the idealised peasant type and the mystical exaltation of manual labour performed not by monk but by husbandman. Yet these inarticulate and despised masses had two achievements to their credit which are worthy to be set beside the greatest works of art and literature and government produced by the Middle Ages. They fed and colonised Europe; and slowly, painfully, laboriously they raised themselves from serfdom to freedom, laying hands as they did so upon a good proportion of that land which they loved with such a passionate and tenacious devotion.

R. H. TAWNEY

The Agrarian Problem in the Sixteenth
Century

I. The New Rural Economy

*II. The Reaction of the Agrarian Changes on
the Peasantry*

*From THE AGRARIAN PROBLEM IN THE SIXTEENTH
CENTURY, Part II, Chapters I and II, Pages 175-280. London:
LONGMANS, GREEN & Company, 1912.*

"The earth is thine, O Lord, and all that is contained therein; notwithstanding thou hast given the possession thereof to the children of men, to pass over the time of their short pilgrimage in this vale of misery. We heartily pray thee to send thy holy spirit into the hearts of them that possess the grounds, pastures, and dwelling places of the earth, that they, remembering themselves to be thy tenants, may not rack and stretch out the rents of their houses and lands, nor yet take unreasonable fines and incomes, after the manner of covetous worldlings, but so let them out to other, that the inhabitants thereof may be able to pay their rents, and also honestly to live, to nourish their families, and to relieve the poor, give them grace also to consider that they are but strangers and pilgrims in this world, having here no dwelling place, but seeking one to come; that they, remembering the short continuance of their life, may be content with that is sufficient, and not join house to house and field to field, to the impoverishment of others, but so behave themselves in letting out their tenements, lands, and pastures, that after this life they may be received into everlasting dwelling places; through Jesus Christ, our Lord. Amen."—*A Prayer for landlords, from a Book of Private Prayer, authorised and set forth by order of King Edward VI.*

"Nowe if I should demand of the gredie cormoraunts what they thinke should be the cause of sedition, they would saie.—'The painen knaves be too welthy, provender pricketh them. They knowe not themselves, they knowe no obedience; they regard no lawes, they would have no gentlemen, they would have all men like themselves, they would have all things commune. They would not have us master of that which is our owne. They will appoint us what rent we shall take for our grounds . . . They will caste down our parkes, and lay our pastures open . . . They will compel the King to graunt theyr requests . . . We wyll tech them to know theyr betters. And because they would have all in common, we will leave them nothing.'"—E. E T. S, Crowley, *The Way to Wealth*.

I. The New Rural Economy

(a) *Motives and causes*

A COMMON view of social development regards it as the outcome of irresistible causes working towards results which can be neither hastened nor averted, and treats the fact that events have followed a certain course as in itself an indication that no other course was possible. Whatever is has always been implicit in the past; the established fact rules by the divine right of being the only possible dynasty, and no scope is left for pretenders to contest or acts of settlement to alter its legitimate title. It is not surprising that such a theory should be peculiarly popular in interpreting economic history. On their frontiers even the most different forms of social organisation shade into one another. Each generation naturally sees in a strong light those regions of the past which reproduce the features with which it is familiar, and overlooks the existence of wide Hinterlands whose general features are quite different. Since important classes, like important individuals, find it difficult to believe in the truthfulness of any picture where they do not occupy the greater part of the canvas they insensibly encourage a conventional interpretation of history, which lends an air of respectable antiquity to the legal and economic arrangements which favour them and which they favour, by treating such arrangements as an essential characteristic of civilisation itself. In reality, however, it is only by dragging into prominence the forces which have triumphed, and thrusting into the background those which they have swallowed up, that an appearance of inevitability is given to existing institutions, which satisfies the desire to see them as links in an orderly chain of unavoidable sequences. Useful as the conception of a continuous development is, it can easily be carried too far. It is carried too far when it causes us to forget that a small alteration in the lie of the land might have caused the stream to take quite a different channel, and that the smoothly flowing waters of the plain are the outcome of a series of crises in the higher regions, where the spur of a mountain or a cleft in the rocks might easily have diverted their course into other directions. If we must talk of social evolution, we ought to remember that it takes place through the action of human beings, that such action is constantly violent, or merely short-sighted, or deliberately selfish, and that a form of social organisation which appears to us now to be inevitable, once hung in the balance as one of several competing possibilities.

Certainly the possibility that economic changes should have followed a quite different line from that which they actually have can hardly fail to strike the student of agrarian history. The facts, as we read them, do

not lend unqualified support to the idea that the growth, at the expense of the little landholders, of great estates cultivated by hired labour was the inevitable result of irresistible forces, or that the new agricultural régime was a necessity on account of the sluggishness of the old. To an observer of agrarian conditions living about the year 1500, who looked back over the conditions of the last century, all the possibilities must have seemed to point in the direction of a continuous improvement in the condition of the peasantry. It is evident that the growth of prosperity among the small cultivators was leading from the beginning of the fifteenth century to the gradual consolidation of holdings, to keen competition for the use of land, and to increasing individualism in the methods of agriculture. Though the movement caused a diminution in the number of landholders, the diminution was very gradual. It was not the result of a sudden revolution affecting large numbers of tenants simultaneously; and even those who regarded enclosing with hostility were favourable to the process of gradual redistribution, which did not violate vested interests or cause any sensational disturbance. The appearance of the country would have changed, and the methods of cultivation would have improved. But there would have been no great cause at work to displace the peasantry from the soil, with the rapidity which entailed hardship, until a much later period than we are now considering. Obviously, however, it was not these slow internal changes in the manorial organisation which impressed observers. On the contrary, though they are noticed by the writer who took a scientific interest in agricultural questions, they are hardly mentioned by the majority of commentators on the life ~~of~~ the period, who were interested not in the technique of agriculture but in the social results of changing methods. What aroused their alarm and produced rioting and legislation was, as every one knows, a movement the distinctive feature of which was that it was initiated by lords of manors and great farmers, "the Graziers, the rich buchars, the men of law, the merchants, the gentlemen, the Knights, the Lords,"¹ in short by the wealthiest and most powerful classes, and that it was carried out frequently against the will of the tenants, and in such a way as to prejudice their interests.

As the small capitalist prepared the way for the great, the two movements were connected, and the simultaneous development of both of them explains the rather puzzling mixture of approval and criticism which is to be found in the comments of observers upon enclosing. But their economic and social results were very different. No doubt the incipient movement in the direction of reorganising national life on the basis of industry involved a breach with the customary methods of agriculture, which must in any case have caused a certain degree of dislocation. The development of the textile manufactures, which for two centuries were the chief source of English wealth, could not have taken

¹ Crowley, *The Way to Wealth* (E. E. T. S.).

place without the production of cheap supplies of raw material, and the growth of the towns was dependent on the saving of labour from agriculture. But in such changes the element of time—the speed at which the transition takes place—is all important, because upon it depends the feasibility of social readjustments to meet the new situation. The slow breaking up of the open field system, though it changed the methods of cultivation, might quite conceivably have effected only such a gradual diminution in the number of the small farmers, as to make the absorption into industry of those displaced comparatively easy. In so far as the changes of the sixteenth century were a social revolution, and not merely a gradual development, this revolution was the result not only of technical advances, but of the concentration of landed property and the development of new relationships between landlord and tenant. It is to the second of the two movements that we must now turn.

The new agrarian arrangements which we shall have to consider are called by the name of enclosure, and we will discuss later what exactly enclosure means in this connection. But there are enclosures and enclosures, and we shall do well to begin by drawing some distinctions. In the first place, then, the enclosing movement that will occupy us in this chapter has very little resemblance to the enclosure which we have considered in the last. It is carried out by great men, not by small. It proceeds wholesale, not piecemeal. It does not consist in many little cultivators rearranging their holdings by purchase, or sale, or agreement, but in one great proprietor or his agent consolidating small holdings into great estates. The new arrangements are imposed rapidly and with a high hand from without. They do not arise gradually from within through the spontaneous development of the peasants' needs and resources.

Again, the new movement bears very little resemblance to the rearrangements introduced by lords of manors, which, from an early date, have gone by the name of enclosing. Such rearrangements have not been few. People have talked about enclosing long before they have begun to lament enclosures. Not to mention the encroachments on the waste evidenced by the Statute of Merton, one finds the word "enclosure" used in the thirteenth and fourteenth centuries to describe a variety of agreements made between lords whose lands were contiguous, or between lords and their free tenants, by which, instead of the parties concerned using a given area in common as their pasture, each surrenders his right of access to part of it, and obtains in return the right to use another part in severalty. The Abbot of Malmesbury² and the men of Niwentone come

² *Registrum Malmesburiense*, vol. ii. pp. 220-221: "Quod . . . dictus abbas de Malmesburia non debet de cetero colere terram de Niwentone . . . nisi antiquitus consueverat coli. Et quod dictus Walterus de Asselegge habebit mariscum suum de Cheggeberge quietum a communia hominum de Niwentone. Dicti vero abbas et conventus Malmesburia habebunt mariscum suum iacentem ex Orientali parte stratæ publicæ quæ vocatur Fos quietum et exceptum a communia hominum de Asselegge. Habebunt etiam . . . campum Australiem in Niwentone quietum et exceptum a communia hominum de Asselegge. Omnes vero alia terræ ad dictas villas pertinentes . . . erunt in pastura communi."

to an arrangement with Walter of Asslegge and the men of that village, whereby the monastery agrees to follow the customary routine in cultivating the land lying between Niwentone and Asselegge, and not to common on the marsh at Cheggeberge, getting in return exclusive rights of pasture over another marsh, and over the east field of Niwentone. The Abbot and Monastery of St. Peter's³ of Gloucester make an agreement with Lord Thomas Berkeley whereby the former are "to have and hold in severalty and enclose and approve at their will" certain lands lying in Southfield "so that the said Thomas and his free tenants may not . . . claim or demand common, but be excluded from it for ever," and in return covenant that the latter may "enclose and approve their lands in all parts of the summit of the Pike of Coveleigh." Similar arrangements are made between the Abbot of Glastonbury⁴ and a neighbouring landowner, between the Abbot of Cerne⁵ and Robert of Bloxworth, and between the City of Coventry⁶ and the master and brethren of the Trinity Gild of that town.

Whether it is a chance that such agreements seem to occur with special frequency in the records of religious houses we cannot say. It is possible that the perpetual character of a corporation made exclusive enjoyment at once more desirable and more feasible, a great abbey, like St. Peter's of Gloucester, could pursue a continuous and far-sighted policy, and wait more than a generation to see the results of its experiments. Nor is it possible to understand the motives for such arrangements without information as to local conditions which is not easily obtainable. Sometimes the object was simply to protect land used for agriculture against the depredations caused by the game of a hunting landlord. Sometimes it would seem to have been to allow of a variation in the methods of agriculture, for example the sowing of a piece of land which could not be sown as long as several persons had right of pasture over it. Occasionally it was simply to realise an obvious convenience dictated by the lie of the land, each party gaining more by the exclusive use of pasture lying near to him, than he would lose by surrendering rights of common over that part which lay at a distance. Two points, however, are worth noticing. The first is the use of the word "enclosure." Arrangements which go by the name "enclosure" are made at a very early date by the manorial authorities, and the latter would have been very much surprised to be told that they were inaugurating an agrarian revolution. The second is the character of these enclosures. They are in every way different from those which produced discontent in the sixteenth century. Though they affected the routine of cultivation they did not imply any abandonment of arable farming. Since they were carried out mainly by an exchange

³ *Historia et Cartularium Monasterii Gloucestriae*, i 147-149.

⁴ Hoare, *History of Wiltshire*, Hundred of South Damerham.

⁵ *Hist MSS Com.*, Cd. 5567 (Report on the MSS of Lord Middleton), pp. 61-62 This agreement was made in 1231.

⁶ *Coventry Leet Book* (edited by Mary Dormer Harris).

of rights they did not prejudice the tenants. Further, the disputes of which they were sometimes the result were not disputes between the lord of a manor and his tenantry, but between the lord and tenants of one manor and the lord and tenants of another, the ground of the disagreement being the difficulty of adjusting rights of common over the debatable land which must often have lain between two manors, and the division of interests being, as it were, a vertical, not a horizontal, division. In fact, these early examples of enclosure throw light on the later movement only by way of contrast. What we meet in our period is not isolated innovations of this character, but a general movement spreading across England from Berkshire in the South to Norfolk and Lincoln in the North-East, and affecting especially the corn-growing counties of the Midlands, a movement which meant a great extension of pasture-farming, a violent collision of interests between the manorial authorities and the peasantry, and a considerable displacement of population. Clearly some new and powerful causes must have been at work to account for it.

In the third place, the movement which goes by the name of enclosing in the sixteenth century has little similarity with the changes which proceeded under the same name from about 1700 to 1850, and which went on most swiftly in the reign of George III. It differs from them in method. In the eighteenth century Parliament is supreme. It is simply a committee of landlords and their hangers-on, and it makes Private Bill legislation a very easy method of getting enclosure carried out. In our period the Government, for reasons to be discussed later, sets its face against most kinds of enclosing, and such enclosures as are made are made in defiance of the law. It differs from them in motive. We must not prejudge the question whether the enclosures of our period were made mainly for pasture or for arable. But leaving this question on one side, we can point to certain broad contrasts. The ostensible motive of the eighteenth century enclosures is to improve the productive capacity of the land by spending capital upon it. This is the reason alleged when Private Bills are being promoted, and this is the aspect of the movement which causes it to be eulogised by the agricultural experts. Of course landlords were not philanthropists. As Mr. and Mrs. Hammond⁷ have demonstrated, there were often very sordid motives behind their resounding platitudes on the advantage of throwing commons and small holdings into large compact estates, and, even when these were not too conspicuous, the interests of the smaller landholders were sometimes treated with the most outrageous injustice. Still the general nature of the movement was clearly in the direction of bringing under better cultivation land which had hitherto not been used to its full economic capacity. The price of foodstuffs after 1750 rose enormously, and the rise in prices offered a golden harvest to any one who would prepare land for producing larger supplies. The landlords of the eighteenth century did not merely enclose.

⁷ In their book, *The Village Labourer from 1760 to 1832*.

They improved as well. Part of their increased rent rolls was interest on capital which they had invested for the purpose. Now in the sixteenth century there is very little trace of any movement of this kind. What improving is done, is done by the peasants themselves. There is no sign of the great proprietors making large capital outlays in order to render their estates more productive, except in the way of the trifling expenditure entailed by fencing, hedging, and ditching. They are by no means pioneers of agricultural progress. Enclosing is profitable to them not because it enables them to convert barren heaths into smiling corn-fields in the manner described by Arthur Young, but because it enables them to use the land as they please, to let it down to pasture when the price of wool is high, to employ few labourers on it instead of many, and, possibly, to add to their own estates part of their neighbours' holdings. They do not bring under cultivation land which would otherwise lie waste. On the contrary, very often they turn into a waste land which would otherwise be under cultivation. Whether the picture which represents the eighteenth century enclosures as the effort of an energetic and public-spirited class to overcome old-fashioned prejudices by applying the resources of science to agriculture is veracious or not, we need not now inquire. As far as the century and a half from 1485 is concerned it is altogether out of place.

The changes which we are about to describe have at once a social and an economic reference. The former is the aspect which receives most attention from contemporaries. They lament the decay of the peasantry, the embittered relations between classes, the distress and discontent caused by the new agrarian régime. They are usually not much concerned with the economics of the situation. Economic issues are not yet separated from questions of personal and public morality. To find subtle reasons why it is unavoidable that a large number of persons should be impoverished seems to them very like condoning a crime. Some excuses only aggravate the offence, and if men are cursed with a neighbour who insists on fulfilling economic laws by raising prices or taking usury, they are less likely to discuss his conclusions than first to present him for breaking the statutes and then to break his head for his bad principles. So they judge the dominant movement by its fruits, and its fruits seem very evil. But to us the economic problem is the primary one. The occurrence of rapid changes in the structure of an old and stable society implies either some radical revolution in the basis of economic life, or some great change in men's conception of social expediency, or, what is most likely, an economic and a spiritual change occurring together. To understand its effect we must understand the sort of economic environment from which it springs.

In the first place, then, the age of the Tudors is a commercial age, and it becomes more commercial as the century goes on. No doubt it is only of certain classes and in certain relations of life that such a statement is

true. The permanence of economic arrangements, which makes Froude declare that at the end of the fifteenth century the model of the upper classes was still the chivalry of the Arthurian legends, is seen still more strikingly among the artisans and peasants, and it is only very slowly and painfully that they are drawn into the net woven by the growth of capitalist trade. But it is with the classes who respond to the new movement that the power of the future, though not its graces, lies, and it is through the widening of the influence of commerce and commercial transactions that the economic developments most typical of our period take place. The age is a commercial one in the sense that much attention is given by Governments from the reign of Henry VII. onwards to fostering the conditions which promote trade and industry. This is not the place to discuss the meaning of Mercantilism or the truth of Bacon's⁸ epigram that Henry VII. "bowed the ancient policy of this State from consideration of plenty to consideration of power." Though in the reign of Henry VIII. the State is almost a religion, one can easily exaggerate the influence of its interference even in that much governed age. Nevertheless no one who looks at the Statutes, or the Acts of the Privy Council, or the Domestic State Papers for the reigns of Henry VII., Henry VIII., and Elizabeth, can fail to realise that much of the time of Governments is occupied with devising measures which are intended to hasten industrial and commercial development. There is a settled habit of mind with regard to these matters which is quite conscious of its ends, though its means may often be ill-chosen. Every one is agreed that the encouragement of trade is the duty of the Prince.⁹ There is a real popular demand for the intervention of the authorities, and they respond to it readily enough.

The age is a commercial one in the more fundamental sense that large economic changes are initiated by classes and individuals. Foreign trade grows enormously in the early years of Henry VIII., though certain branches of it suffer a temporary set back at the end of the reign.¹⁰ The use of money, of which during the first quarter of the century there was a shortage, begins in the middle of it to spread throughout all classes. The industry which for the next three centuries is to be the chief manufacture of England becomes firmly established. Under the influence of widening markets, trade separates from trade.¹¹ Within single industries there is an increasing subdivision of labour; many links intervene between the group supplying the raw material and the group which hands the finished article

⁸ Bacon, *History of King Henry VII.*

⁹ See e.g. Starkey's *England in the Reign of King Henry VIII.*, p. 173 (E. E. T. S.): "Ye, and though our cloth, at the fyrt begynnyng, wold not be so god peradventure, as hyt ys made in other partys, yet, in processe of tyme, I cannot see why, but that our men, by dylygence, myght attayn thereto ryght wel; specially yf the Prince wold study thereto, in whose powar hyt lyeth chefely such thyngys to helpe." Also *The Commonwealth of this Realm of England* (Lamond), and Pauli, *Drei Denkschriften*, &c.

¹⁰ Schanz, *Englische Handelspolitik gegen Ende des Mittelalters*, Band II., "Zoll und Handelstatistik," pp. 1-156.

¹¹ Unwin, *Industrial Organisation in the Sixteenth and Seventeenth Centuries*.

to the consumer; a special class of capitalist entrepreneurs¹² appears to hold the various stages of production together, to organise supplies, and to find markets. Side by side with the development of manufacturing industry goes a development in the organisation of finance. In the woollen industry men buy and sell on credit. In tin-mining¹³ and coal-mining¹⁴ they sink shafts with borrowed capital. The first joint-stock¹⁵ companies are established in the middle of the century with capitals of from £5000 to £20,000. There is a regular money market in London, there are bill brokers, arbitrage dealings between it and the Continent, adventurers who take advantage of the increasing fluidity of capital to speculate on the difference in the rates at which it can be borrowed in the Low Countries and in England. By the end of the century London has partially ousted Antwerp as the financial capital of Europe.¹⁶

In the second place, the social arrangements of England are such as to make it certain that this increasing activity will react almost immediately on agriculture and on agrarian relationships. There have been countries where a sharp line has been drawn between trade and agriculture, where the landowner could not engage in trade without degrading himself, where the tradesman could not buy up the noble's land.¹⁷ But this has never been the case in England. In that precocious island the Lombards had hardly settled in Lombard Street, when Mr Pole's daughters discovered that the fine shades flourished their finest in country air, and there was a market for heiresses among the English aristocracy long before Columbus had revealed to Europe the Eldorado of the New World. From a very early date the successful merchant has bought dignity and social consideration by investing his savings in an estate. The impecunious gentleman has restored the falling fortunes of his house by commercial speculations, of which marriage into a merchant family, if not the least speculative, is not the least profitable. At the beginning of the sixteenth century both movements were going on simultaneously with a rapidity which was before unknown, and which must be explained as the consequence of the great growth of all forms of commercial activity. The rise of great incomes drawn from trade had brought into existence a new

¹² See e.g. the account of the East Anglian woollen industry in the *Victoria County History*, Suffolk (Unwin's article on "Social and Economic History").

¹³ G. R. Lewis, *The Stannaries*, pp. 214-215, and quotations from Lansdowne MSS 76, fol. 34, given there.

¹⁴ *Hist. MSS. Com.*, Cd 5567 (Report on the MSS. of Lord Middleton)

¹⁵ W. R. Scott, *Joint-Stock Companies to 1720*, vol. ii.

¹⁶ For a description of "The Exchange and What It is," see T. Wilson, *Discourse upon Usury* (1584). His remark, "The second kind of bill . . . may be called sickle and dry exchange, and is practised where one doth borrowe money abroad . . . not meaning to make any real payment abroad, but compoundeth with the exchange to have it returned again," illustrates what is said above. See also Camden Society, *Dialogue or Confabulation of Two Travellers* (1580): "The said Hans had provided £10,000 for the Prince of Condé upon five in the 100 at interest, and if I would have the like he would help me unto it. Then I . . . pondered what benefit it would be to me to let it out again at ten in the hundred to some nobleman in England." Down to about 1560 at any rate the English Government was constantly in the hands of foreign capitalists. See Gairdner, *L. and P. Henry VIII.*, and Burdon's *Life of Gresham*.

¹⁷ e.g. Prussia before 1807.

order of business men whose enterprise was not confined to the seaport and privileged town, but flowed over into the purchase of landed estates, even before the secularisation of monastic endowments made land speculation the mania of a whole generation. Great nobles plunged into commerce, were granted special trading privileges, and intermarried with the rising middle-class families who were often better off than themselves. In all ages wealth allies itself with wealth, and power with power. As soon as the appearance of rich merchant families creates a fresh and powerful interest in society, the old social system and the new¹⁸ coalesce, and each learns from the other—the merchant how to make a display as a landed proprietor and a Justice of the Peace, the old-fashioned landlord how to cut down expenses and squeeze the utmost farthing out of his property in the best City manner. Even if the political and economic environment had remained unchanged, the mere formation of commercial capital and of a moneyed class could hardly have failed to work a slow revolution in agrarian relationships.

But the environment did not remain unchanged; and as a consequence, in economic affairs as in religion, the new order came, not gradually, but swiftly and with violence, sapping ancient loyalties, confronting with insoluble problems simple men who desired only to plough the land like their fathers, holding out to the privileged orders that prospect of suddenly increasing their wealth which is the most awful temptation from which any class can pray—if it will pray—to be delivered. On the side of politics a powerful motive for a change in the relations between landlords and tenants was supplied by the Tudor peace. In the turbulent days of the fifteenth century land had still a military and social significance apart from its economic value; lords had ridden out at the head of their retainers to convince a bad neighbour with bows and bills, and a numerous tenantry had been more important than a high pecuniary return from the soil.¹⁹ The Tudor discipline, with its stern prohibition of livery and maintenance, its administrative jurisdictions and tireless bureaucracy, had put down private warfare with a heavy hand, and, by drawing the teeth of feudalism, had made the command of money more important than the command of men. It is easy to underrate the significance of this change, yet it is in a sense more fundamental than any other; for it marks the transition from the mediæval conception of land as the basis of political functions and obligations to the modern view of it as an income-yielding investment. Landholding tends, in short, to become commercialised. The meaning of this movement is best understood if one

¹⁸ For examples see A. Abram, *Social England in the Fifteenth Century*, especially Part II., chap. ii., "The Rise of the Middle Class," and Plummer's *Fortsue*, p. 17. In the *Cely Papers* (Camden Society), p. 153, a correspondent of George Cely writes, "yowre sallys made withyn lesses than thys yere amounges above £2000 sterleng."

¹⁹ See the Paston Letters, *passim*; and also the account given in *Hast. MSS. Com.*, Cd. 5567 (Report on the MSS. of Lord Middleton), 142-145, of the marvellous doings of Sir Gyles Strangways in Dorsetshire as late as 1539, pp. 115-117 contain a similar case of private warfare from the year 1477.

compares with the South and Midlands those parts of England where to the very end of the sixteenth century the older conditions survived. The surveys of many Northumbrian²⁰ manors reveal throughout this period of rapid agrarian changes the continuance of a very primitive condition of things. The holdings of the customary tenants are often almost rigidly equal; there is hardly any change in their numbers, son succeeds father, and grandson succeeds son, with only the very slightest disturbance. The manorial officials, who in the South were cursed as the agents of evictions and rack-renting, were in the North much concerned with keeping tenants on the soil. At Acklington the tenants, writes Clarkson, "must be helped and rather cherished for service sake." At High Buxton the holdings of the tenantry have been increased in order that "they should the better live and do their dutiful service to their Lord and master," and a freeholder is rebuked for action which results in curtailing the commonable area on the ground that "the tenants be but poor men and be not well horsed, as they are bound by their copies." At Tughall²¹ the surveyor complains bitterly in 1567 that in time past, apparently a long time past, twenty-three tenants had been reduced to eight by "such as nothing regard his lordship's service, nor the commonwealth." To what are we to ascribe this permanence of tenure among the peasants, this exceptional solicitude for the maintenance of a numerous tenantry on the part of surveyors? Partly, no doubt, to the fact that Northumberland lay apart from the main stream of commercial life, and was as yet little affected by the growth of the woollen industry. Mainly, however, it was the result of the military importance of a numerous tenantry on the Northumbrian border. In that wild corner which is neither England nor Scotland, English and Scots, Scroopes and bold Buccleuchs, gnash their teeth at each other across the wan water of the Eden. In the long northern evenings about Lammastide moormen win their hay with axes in their belts and bows piled in the corner of the field, and customary tenants are bound by their copies to provide horse and armour, and to ride to the musters in person or by proxy. No wonder that while elsewhere landlords pore over their accounts of wool or timber, in Northumberland they should measure their wealth by the men whom they can bring out when the summons goes, and insist on feudal obligations with

²⁰ *Northumberland County History*, e.g. Amble (vol. v.), Acklington (*ibid.*), High Buxton (*ibid.*), Birlng (*ibid.*); vol. viii. p 230, figures as to eight manors in Tynmouthshire. At Birling out of ten names which appear in the surveys of 1567, eight reappear in 1616, at Acklington, out of eighteen names, nine reappear; at High Buxton, out of four names, four reappear in 1616 and two in 1702. But in parts of the county there were rapid changes at the end of the sixteenth and beginning of the seventeenth centuries.

²¹ *Northumberland County History*, vol. i. p. 350: "In the ancient tyme the fermor of the demaines had the charge of the tenants of the said lordship as bailiff, with the fee of £3, Os. 5d. by year. Then was the town of Tughall planted with xi husbandmen well horsed and in good order, viii cottagers, iii cotterells, one common smith for the relief and better aid of the said tenants and bailiff, being in number 23 householders, besides the demains, which are nowe by suche as nothing regard his lordship's service nor the commonwealth he brought to 8 farmers only, to the great decay of his lordship's service and discommodity of the said commonwealth."

a rigour unknown in the South. When any night Scotch²² raiders may come storming over the marches, any night the red cock may crow up to the very walls of merry Carlisle, a holding means not only a piece of land that grows wheat and feeds sheep, but a horseman in harness; and the dropping out of a holding, or its merging in that of some one else, results in the weakening of the force on which the peace of the border depends. As a consequence, there is nothing like free trade in land between the tenants, such as developed in the South under the forms of surrender and admission, and there is little incentive for the lord or his officials to get rid of them. Such an exceptional state of things comes to an end in Northumberland with the union of the two Crowns under James I., and its termination is the signal for an attempt to break down customary tenures on the part both of the Crown²³ and of private landowners. But it survives a century longer on the border than it does elsewhere, and while it lasts it offers a standard by which may be measured the extent and significance of the change which is overtaking agrarian relationships in other parts of England, where commerce is more developed, and where, since a tenant can no longer serve his lord by fighting, a sheep may easily be more valuable than a man. With the development of a strong central Government the military strength of the great landlords was broken, though it blazed up in the Pilgrimage of Grace and in the rebellion of 1569, and as a consequence they turned their attention to getting the maximum economic return from the soil, or to adding to their social dignity by parks, instead of maintaining a large body of tenants upon it.²⁴

²² See e.g. the ballad of "Kinmont Willie," turning on an incident which occurred in 1596.

²³ *Cal. S. P. D. James I.*, vol. cxxxii, July 27, 1622. Letter to the Bishop of Durham to confer with the judges of Assize for the Northern Counties touching tenant-right or customary estate of inheritance claimed in those parts, ordering them to abide strictly by the King's Proclamation against tenant-right, or the holding of lands by border service, to countenance no claim founded thereupon, and to acquaint the tenants of his Majesty's pleasure therein, giving them no hope to the contrary. Apparently the instructions were not carried out, as in 1642 the Long Parliament was discussing the subject of the border tenures (*Rushworth Collections*, Pt. III., vol. ii. p. 86).

²⁴ The effect of the Tudor policy on the land system is excellently described by Harrington in *Oceana*, and also in *The Art of Lawgiving*: "Henry VII. being conscious of the infirmity of his title, yet finding with what strength and vigour he was brought in by the Nobility, conceived jealousy of the like power in case of a decay or change of affections. *Nondum orbis adoraverat Romanum*. The lords yet led country lives, their houses were open to retainers, men experienced in military affairs and capable of commanding; their hospitality was the delight of their tenants who by their tenure or dependence were obliged to follow their lords in arms. So that, this being the Militia of the nation, a few noblemen discontented could at any time levy a great army, the effect whereof both in the Barons Wars and those of York and Lancaster had been well known to divers kings. This state of things was that which enabled Henry VII. to make his advantage of troublesome times and the frequent unruliness of retainers; while, under pretence of curbing riots, he obtained the passing of such laws as did cut off these retainers, whereby the nobility wholly lost their officers. Then, whereas the dependence of the people on their lords was of a strict ty or nature, he found means to loosen this also by laws which he obtained upon a fair pretence, even that of Population. But the nobility, who by the former law had lost their officers, by this lost their soldiery. Yet remained to them their estates, till the same Prince introducing the Statutes for alienations, these also became loose; and the lords, less taken (for the reasons shown) with their country lives, where their trains were clipped, by degrees became more resident at court, where greater pomp and expense by the Statute of Alienations began to plume them of their Estates" (Harrington, *Works*, 1700 edition, pp. 388-389).

The change meant an advance in civilisation among the upper classes, and a tightening of economic pressure upon the peasantry. The feudal seigneur had at his worst been a lawless tyrant, and at his best a despotic parent. But he had governed his estate as the sovereign, often the resident sovereign, of a petty kingdom, whose interests were roughly identical with his own, and though his depredations were a terror to his neighbours, his own tenants had little to fear from them, for his tenants were the force on which his very existence depended. In the new political conditions his occupation was gone, and his place was taken by two types of landed proprietor who were at once more peaceable and less popular. On the one hand, there emerges the landlord who is a laborious and acute man of business, and who sets about exploiting the material resources of his estate with the instincts of a shopkeeper and the methods of a land-agent. Of this kind are the Willoughbys²⁵ in the Midlands and the Delavales²⁶ in Northumberland. Often they are sheepfarmers. When their land is rich in minerals they sink coal-pits and mine for iron ore. The predecessors of the captains of industry of two and a half centuries later, they employ labour on a large scale, they open up trade across country by river, they higgle over port dues, they experiment with new inventions, they clear away without mercy any customary rights which conflict with their own. On the other hand, there are the gentry who buzz about the Court, regard London as the centre of the universe, and have periodically to be ordered home to look after the affairs of their country-sides by a peremptory mandate from the Government. When this type becomes prominent, in the reign of Elizabeth, it most commonly spends its time in the interminable pursuit of profitable sinecures, and in endeavouring to induce the City to believe that thrice-mortgaged estates are a gilt-edged security. At its worst it produces Sir Petronel Flash,²⁷ a figure as typical of the sixteenth century as Squire Western is of the eighteenth. At its best it patronises the arts, sets sail for a new world of drama and romance, sighs over Vergil's Eclogues, and goes pricking, almost too graceful a chivalry, through the fairy kingdoms of Spenser. But the men of business, and the men of fashion, and the patrons of literature, are alike in being the symptoms of a new economic and political system, a system which has shorn landownership of the territorial sovereignty which had gone with it, broken down the personal relations of landlord and tenant, and, by turning agriculture into a business, has made it at once more profitable and less strenuous for the former, more exacting and less stable for the latter, than it had been when a landlord was not only a drawer of rents but a local sovereign, a tenant not only a source of income but a dependent

²⁵ *Hist. MSS. Com.*, Cd. 5567 (Report on the MSS. of Lord Middleton), especially the entries relating to the development of the coal trade.

²⁶ *Northumberland County History*, vol. viii., p. 238, vol. ix. (under Cowpen). Robert Delavale apparently began life as an agent to the Earl of Northumberland, but he owned considerable property himself, in 1605 the whole of the lands of Cowpen were in his hands. He was an energetic encloser, see below, p. 204.

²⁷ See Marston's *Eastward Ho!*

who was bound by a tie which was almost sacramental. "It was never a merry world since gentlemen came up"; "never so many gentlemen and so little gentleness"; "the commons long since did rise in Spain and kill the gentlemen, and since have lived merrily there"; such are some of the blessings the new landlords would hear from men who grumble to their mates between the spells of shearing sheep and mowing hay. Those who have watched the uncouth, tough handed master of a backward industry, who has wrought among his workmen as a friend or a tyrant, blossom, under the fertilising influence of expanding markets, into the sedate suburban capitalist who sets up a country house in the second generation and sends his sons to Oxford in the third, and who scientifically speeds up his distant operatives through the mediation of an army of managers and assistant-managers and foremen, will not need to be reminded that economic changes which bring civilisation to one class may often be fraught with ruin to another. The brilliant age which begins with Elizabeth gleams against a background of social squalor and misery. The descendant of the illiterate, bloody-minded baron who is muzzled by Henry VII becomes a courteous gentleman who rhapsodises in verse at the Court of Gloriana. But all that the peasants know is that his land-agents²⁸ are harsher. An Earl of Pembroke has been given immortality by Shakespeare. But the first of his name had founded the family on estates which had belonged to the Abbey of Wilton,²⁹ and by his exactions had provoked the Wiltshire peasants into rebellion. The Raleigh family—it was a Raleigh's chance gibe at the old religion which set the West in a blaze in 1549—had endowed itself with a manor torn from the see of Wells,³⁰ as the Grenvilles had done with the lands of Buckland Abbey. The gentle Sidney's *Arcadia* is one of the glories of the age, and it was composed, if we may trust tradition, in the park at the Herberts' country-seat at Washerne,³¹ which they had made by enclosing a whole village and evicting the tenants. The dramatists who reflect the high popular

²⁸ See the following extract (Lodge, *Illustrations of English History*, iii, 41). William Hammond to the Earl of Shrewsbury on the subject of raising money on the latter's estates from Palavicini, a moneylender. "Though his forward fortune hath made him unable to stand you almost in any steadde, hee hathe dealt with Mr. Maynard to aide him in the provision of this £3000 against the second of next month. He finds him very backwarde to disburse any money upon bond or any other security but lands, neither will he deal with lands in any way of mortgage for years or any long time, but only 2 or 3 months. . . Yf, therefore, it stands with your honour's good liking to make a conveyance of Kingston to Sir Horatio . . . after the rate of £7000 . . . and withal to passe it in this absolute sort that iff the money then laid out by them for your Honour's use bee not repaid on May day next, that they fully enjoy and possess the lands as their owne. . . . Hee saith besides that his surveyors have certified him £500 will bee the most the lands will ever yeald yerely rent, without racking and oppresions, which are no course for suche meane men as they be to take."

²⁹ Roxburghe Club, *Surveys of Manor of William, First Earl of Pembroke*; Stratton's introduction.

³⁰ *History of the Parish of Wivelcombe*, by Hancock. For Walter Raleigh and the revolt of 1549, see the dramatic account given by Holinshed. The incident is described in Froude's *Edward VI*. For the Grenvilles and Buckland Abbey see *Trans. Royal Hist. Soc.*, vol. vi. It ultimately came to Francis Drake.

³¹ Stratton's introduction to *Surveys of Pembroke Manors*

estimation of the freeholder³² see nothing in the grievances of Mouldy and Bullock except the disposition of an ignorant populace to cry for the moon. Shakespeare's Cade, with his programme³³ of seven half-penny loaves for a penny, and the three-hooped pot that shall have ten hoops, is so far proposing only what an energetic mayor is quite prepared to carry out before breakfast. His crowning absurdity, which makes the stalls hiss and the pit cheer, is the promise that "all the realm shall be in common; and in Cheapside shall my palfrey go to grass." A few months after these words were printed Cade came to life in earnest. In the autumn of 1596 some Oxfordshire³⁴ artisans and peasants organised a revolt against "the gentlemen who took the commons," and from that year onwards to 1601 Parliament and the Council had their hands full of the question of enclosures. Men feel the contrast, even when it is only just beginning, and with natural inconsistency sigh for the old order even while they are glorifying the new. "Princes and Lords," wrote Henry VIII.'s chaplain³⁵ about 1538, "seldom look to the good order and wealth of their subjects, only they look to the receiving of their rents and revenues of their lands with great study of enhancing thereof, to the further maintaining of their pompous state; so that if their subjects do their duty therein justly, paying their rents at time affixed, for the rest they care not (as is commonly said) 'whether they sink or swim'!"

While the centralised government of the Tudors gave a new bias to the interests of landlords by stripping them of part of their political power, economic changes were hurrying the more enterprising among them into novel methods of estate management. In the situation which developed in the first fifty years of the sixteenth century they were exposed to pressure from two sides at once. They stood to gain much if they adapted their farming to meet the new commercial conditions. They stood to lose much if they were so conservative as to adhere to the old methods. The explanation of the agrarian revolution most generally given by contemporary observers was that enclosing was due to the increased profitableness of pasture farming, consequent upon the development of the textile industries; and though a recent writer³⁶ has endeavoured to show that most of the land enclosed was used for tillage, and that therefore this explanation cannot hold good, there does not seem any

³² e.g. Heywood's *A Woman Killed with Kindness*, Act iii. sc. 1.

³³ *Henry VI.*, Part II., Act iv. scene 2. I am indebted for the reference to Professor Unwin. Part II. was first printed in 1595.

³⁴ *Hsst. MSS. Com.*, MSS. of Marquis of Salisbury, Part III, pp. 49-50: "The attorney-general to Mr. Robert Cecil. Some information concerning those that intended the rebellion in Oxfordshire. Bartholemew Stere, carpenter . . . was the first person of this insurrection. His outward pretence was to overthrow enclosures, and to help the poor commonalty, that were like to perish for want of corn, but intended to kill the gentlemen of that county and take the spoil, affirming that the commons long since in Spain did rise and kill the gentlemen in Spain and sithen have lived merrily there. After that he meant to have gone to London and joined with the prentices . . . and it was but a month's work to overrun England."

³⁵ E. E. T. S., *England in the Reign of Henry VIII.*, p. 85.

³⁶ See the discussion between Mr. Leadam and Professor Gay in *Trans. Royal Hist. Society*, vol. xiv., new series.

valid reason for disputing it. The testimony of observers is very strong; they might be mistaken as to the extent of the movement towards pasture, but hardly as to its tendency, and with scarcely an exception they point to the growth of the woollen trade as the chief motive for enclosing.

Moreover, their evidence is confirmed by the proofs which we possess of the expansion of the woollen industry at the end of the fifteenth century. It is true that the figures collected by Thorold Rogers do not enable any satisfactory correlation to be made between the rise in wool prices and the progress of pasture farming. But they are statistically much too unreliable to upset the direct evidence of eye witnesses, being based on various measures which are somewhat arbitrarily reduced to a supposed common standard, relating to many different qualities of wool, and being weighted in particular years by a preponderance of prices from particular counties which are sometimes clearly not typical at all. The figures of Schanz³⁷ as to the export trade in wool and woollen cloths, are a sufficient proof of the growth in the output of wool, and therefore of the growth of sheep-farming. They show that while the export of unmanufactured wool fell off in the sixteenth century, that of grey cloth grew enormously. In 1354 the export had been 4774½ pieces, from 1509 to 1523 it averaged 84,789 pieces a year, from 1524 to 1533, 91,394 pieces, from 1534 to 1539, 102,647 pieces, and from 1540 to 1547, 122,354 pieces, while in 1554 the total manufacture was estimated at 160,000 pieces of cloth and 250,000 pieces of hosiery. This expansion of the manufactured cloth industry was only the culmination of a growth which had been going on gradually for a hundred years. In 1464 the Flemish manufacturers³⁸ were complaining that their market had been invaded by English clothiers. Merchants like the Celys shipped enormous consignments of wool from the Cotswolds to the Continent.³⁹ The large number of sheep kept in England at the end of the fifteenth century was the amazement of foreigners,⁴⁰ and English buyers groaned over the high prices to which wool was driven by the competition of continental buyers.⁴¹ The revolution in the technique of agriculture when sucked into the vortex of expanding commerce is, in fact, simply an early, and, owing to the immobility of sixteenth century conditions, a peculiarly striking example of that reaction of widening markets on the methods of production, which is one of the best established of economic generalisations.

At the same time, the revolution was probably hastened by a change in commercial policy, which, while encouraging the export trade in woollen cloth, was after 1485 less favourable to the corn-grower. During

³⁷ Schanz, *Englische Handelspolitik gegen Ende des Mittelalters*, Band II., p. 18.

³⁸ Abram, *Social England in the Fifteenth Century*, p. 33.

³⁹ *Ibid.*, pp. 40-41.

⁴⁰ Camden Society (1847), *Itinerary Relation of England*.

⁴¹ Camden Society (third series, vol. i), *Cely Papers*. In 1480 the elder Cely writes. "I have not bought this year a loke of woll, for the woll of Cottyswolde is bought by the Lombardys;" and in the following year, "Ye avyse me for to buye woll in Cottyswolde, bot it is at grate prise, 3s. 4d. a tod, and gret ryding for woll in Cottyswolde as was any yere this vii yere."

the greater part of the fifteenth⁴² century the Government was forced by the agrarian interests to allow freedom of export for grain except when prices reached a certain height, after which point an export licence was required. But the victory of Henry VII produced a policy which was less influenced by the traditional object of helping the corn-growing landlords, and more favourable to commerce and the middle classes on which the new monarchy rested. In 1491⁴³ the export of grain, except with a special licence, was forbidden altogether, and in 1512 the prohibition was repeated by Henry VIII. Though the administration of such a policy must have been difficult, and its exact effect must be a matter of conjecture, the view taken by some contemporaries,⁴⁴ that it was a subordinate cause which stimulated the abandonment of old agricultural methods and caused a good deal of land to go out of cultivation, is at any rate intrinsically probable.

If the expansion of the woollen industry offered a fortune to those who adopted the new methods of estate management, the depreciation in the value of money threatened with ruin those who did not. The agrarian changes of the sixteenth century cannot be traced primarily to the revolution in general prices which all European countries experienced, because they had already proceeded some way before the full extent of the movement in prices became apparent. Throughout the fifteenth century the value of money, as far as can be judged from such statistics as we possess, was fairly stable, and, if anything, somewhat appreciated. During the first half of Henry VIII.'s reign there were complaints⁴⁵ of the scarcity of the metallic currency. On the very eve of the dissolution of the monasteries we find a religious house in Northumberland reversing the movement which had been going on for two centuries in most parts of the country, and actually commuting money rents into payments in kind,⁴⁶ on the ground that the tenants could not command the necessary coin. Such facts should warn us that England was far from being a single economic community, and that the effects of the cheap money penetrated into the more backward regions only very slowly indeed. Nevertheless, in the more advanced parts of the country, the tide turned soon after the beginning of the new century, though it was not till the fourth decade of it that it became a mill-race in which all old economic standards were

⁴² Cunningham, *Growth of English Industry and Commerce*, Early and Middle Ages, pp. 447-448. The statute sanctioning export without licence when the price was below 6s. 8d. was 15 Hen. VI, c. 2, which was made perpetual by 23 Hen. VI, c. 5, 3 Ed. IV, c. 2, forbade the importation of foreign corn except when the price reached 6s. 8d.

⁴³ *Ibid.*, Modern Times, Part I., p. 85

⁴⁴ e.g. *The Commonwealth of this Realm of England*, pp. 54-60

⁴⁵ See the whole question discussed in Schanz, *Englische Handelspolitik*, Band II, pp. 481-540.

⁴⁶ *Northumberland County History*, vol. viii p. 232. In 1595 a dispute as to corn rents arose between the Earl of Northumberland and the Tynemouthshire tenants, the Earl insisting on payment by the Newcastle measure, the tenants demanding to pay by the Winchester measure, on the ground that they are so poor that "they are not able with horse, furniture, and geare to serve as their ancestors have done, as it appeared upon the late muster." Evidence given by an ancient yeoman before the Commission appointed to hear the case showed that the tenants had formerly paid in money, and that the change from money to corn had been introduced in the time of the last Prior for the sake of the tenants, not for the sake of the Priory.

submerged. The general course of the movement, so far as it affected commodities in general use, is set forth below. The figures are re-arranged from those supplied by Steffen,⁴⁷ whose work is mainly based on that of Thorold Rogers.

TABLE I

	Wheat per Qr.		Peas per Qr.		Oats per Qr.		Barley Malt per Qr.		Oxen	Sheep	Pigs	Hens	Eggs per Gross			
	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	s.	d.	d.			
1401-1450	5	9½	3	2¾	7	9	4	3	16	5½	2	1	7	6½	2	5
1451-1500	5	6½	3	4½	6	6½	3	8	15	7½	1	10½	8	3½	2½	5½
1501-1540	6	10½	5	1¾	9	4¾	4	5	22	9	2	10½	10	0	3	9
1541-1582	13	10½	..	20	10½	10	5	70	0½	6	4	..	4½	..	..	..

Though it would not be right, of course, to force these figures too far, as one cannot be sure that they are in all cases typical, the indication which they offer of a remarkable rise in prices beginning soon after 1500 is in all probability substantially correct. The result of this movement in dragging down the standard of comfort of the people has often been noticed, and need not be emphasised here. But it is important to observe that it had a very marked effect upon the traditional methods of agriculture, because it supplied landowners with a new incentive to squeeze the utmost possible income out of their estates. Since they were buying everything dearer, they were under a strong inducement to turn land to the most profitable use, and to revise all existing contracts which prevented an advance in tenants' payments. In the not unnatural confusion which surrounded the question of the cause of the general rise in prices, this aspect of the agrarian troubles failed very generally to be appreciated by contemporary writers, who were inclined to argue that the higher prices were due to the increased rents, instead of seeing that the increased rents were themselves the consequence of the increased prices. But it was emphasised in the middle of the century by the author of the *Commonwealth of England*,⁴⁸ and at the end of it by Gerrard de Malynes,⁴⁹ who puts the case with great power and perspicacity, though he perhaps may be thought to exaggerate the importance of the debasement of the currency. "Every man knoweth," he wrote in 1601, "that by reason of the base

⁴⁷ Steffen, *Studien zur Geschichte der Englischen Lohnarbeiter*, Band I., pp. 254-255 and 365-366.

⁴⁸ *The Commonwealth of this Realm of England* (Lamond), especially p. 81: "Knight: What sorte is that which youe said had greater loss thereby then those men had profitte? Doctor: It is all noblemen, and gentlemen, and all other that live by a fixed rent, or stipend, or doe not maner the grounde, or do occupie no byinge or sellinge. . . . He that maie spend £300 a yeare by such revennewes and fees, may kepe no better porte then his father, or anie before him, that could spend but £200. And so ye maie perceave, it is a great abatement of a man's countenance to take awaie the third part of his livinge. And therefore gentlemen doe so much studie the Increase of thire landes, enhauncing of their rentes, and so take farmes and pastures into thire owne hands."

⁴⁹ *A Treatise of the Canker of England's Commonwealth* (1601).

money coined in the end of the most victorious reign of King Henry VIII. all the forraim commodities were sold dearer, which made afterwards the commodities of the realm to rise at the farmers' and tenants' hands, and therefore gentlemen did raise the rents of their lands and take farms themselves and made inclosures of grounds, and the price of everything being dearer was made dearer though plenty of money and bullion coming daily from the West Indies. . . . If we require gentlemen to abate their rents, give over farms, and break up enclosures, it may be they would do so if they might have all their provisions at the price heretofore." Yet such a statement gives but a faint indication of the revolutionary effect upon agrarian relationships of the depreciation in the value of money. The modern reader, before whose eyes all economic standards are fluctuating from day to day, can hardly grasp the anarchy which it tended to produce in a world where values, especially land values, were objective realities which had stood unaltered for centuries together. The landlord sees his income slipping from him, though his estate pays as much as before. The tenant finds his landlord pressing for higher rents and fines, though the yield of the land has not increased. Yet neither desires anything but to remain as they were, and both are ignorant of the force which sweeps them out of the ancient ways. For, in the wholesome manner of the age, they ascribe all economic evils to personal misdemeanours, the unreasonableness of merchants, the covetousness of gentlemen, the extortions of husbandmen, and the real cause is an impersonal one, which carries them forward against their will, like men "thrusting one another in a throng, one driving on another"⁵⁰ It is easy to understand that it must have been difficult to maintain customary payments and traditional methods of agriculture against the screw which the rise in prices turned on the landowning classes. Agricultural experiments were in the air, and with experts explaining how to double the value of an estate by enclosure without prejudicing the tenants, it is not surprising that landowners, who saw their real incomes dwindling with the fall in the value of money, should have adopted the principle of their advice and neglected the qualifications.

(b) *The growth of the large leasehold farm*

The changed situation created by these causes had the effect of producing a new policy on the part of landlords, which took different forms according to the circumstances of different localities, but which in the counties most deeply affected resulted in an increase in pasture-farming and in an upward movement in the payments made by tenants. The new régime seems to have affected first, as was natural, that part of their estates which was most entirely under their own control, and the disposal of which was least involved in other interests, namely, the manorial de-

⁵⁰ *The Commonwealth of this Realm of England* (Lamond), p. 100.

mesne. It is not altogether easy to construct a picture of the policy pursued by a typical enclosing landlord from the accounts of contemporaries, who were more interested in results than in the steps by which they were reached. According to some of them, lords in the sixteenth century were resuming into their own hands those parts of the demesne which had been let out, in order to supply their establishments with produce without having to rely on the markets when prices were rapidly rising. On some manors again, when the demesne was "in the hand of the lord," considerations which were not purely economic came into play, for example, one finds part of it being turned into a park, which was at once profitable as a means of grazing sheep, and prized for those motives of social amenity and ostentation which have done so much to make the English countryside the admiration of travellers, and so much to ruin the English peasantry. It was not seldom that the confiscated estates of monastic houses were converted into a pleasure or a deer-park by their new proprietors.

On the other hand, the manorial documents suggest that landlords were usually rather parties to changes in the methods of cultivation than themselves the agents who carried them out, because, at any rate in the case of the larger landowners, the demesnes were usually leased. The actual process of experiment and innovation took place on most manors through the instrumentality of the lessee.⁵¹ The large farmer, who on many manors is found managing the demesne, is much the most striking character in the rural development of the sixteenth century. His fortunes wax while those of the peasantry wane. Gradually he thrusts them, first copyholders and then yeomen, into the background, and becomes in time the parent of a mighty line, which later ages, forgetting poor Piers Plowman, whose place he has usurped, will look on as the representative of all that is solid and unchanging in the English social order. In our period he plays in the economics of agriculture the part which was played in industry by the capitalist clothier, and his position as the pivot of agrarian change is so important that it will repay close attention.

In the first place, then, it is clear that the foundation of the large farm was the practice of leasing the demesne for a term of years, which was the normal way of disposing of it in the sixteenth century. In the reign of Elizabeth the distinction between the demesne and the customary tenancies still survived, and surveyors were at some pains to separate them in order to prevent the demesne being merged in the customary holdings. But the original meaning of the distinction had been almost obliterated; the demesne was no longer the centre of the manorial economy,

⁵¹ This may seem inconsistent with the fact that in the statistics published by Mr. Leadam from the Inquisition of 1517 most enclosures in most counties are entered as made by lords of manors. I do not think, however, that this is necessarily so. When it is stated that a lord of a manor has enclosed and converted to pasture, it may very well be meant that his agent did so with his consent. *I.e.* the distinction would appear to be not between the lord and the lord's farmer, but between the manorial authorities (lord and farmer) and the rest of the landholders. The phrase used in the Berkshire returns, "converti permisit," indicates what I take to have been the most general, though not, of course, the invariable, course of events.

as it had been when its produce maintained the lord's household, and the labour of the customary tenants, in spite of the survival of many services, no longer supplied the chief means of cultivating it. On the whole, it would be true to say that on ninety-nine manors out of a hundred the demesne was leased by the middle of the sixteenth century, and on the majority of them probably at a much earlier date. There are, of course, some exceptions. Certain manors the lord makes his headquarters, and there the home farm is retained in his hands, because it is required to supply his establishment. On other manors the demesne or part of it can no longer be distinguished from the holdings of the customary tenants, and is held by them by copy of Court Roll in the same way as the "customary land." In certain parts of England, again, the leasing of the demesne has not proceeded far, because the demesne has always been relatively unimportant. On several Northumberland manors, for example, the surveyor⁵² could in 1567 find no demesne at all, either because it had all been divided up among the tenants, or because it had never existed. Nevertheless, in spite of these exceptions, a lease for a term of years to a farmer or farmers is the ordinary method of disposing of the demesne in the sixteenth century. This is proved in a very satisfactory way by the investigations of Professor Savine⁵³ into the disposition of the lands of monastic houses in 1534. After an exhaustive inquiry relating to several hundred manors he found that the cases in which the demesne was not leased were an insignificant proportion of the whole. An examination of smaller groups of manors tells the same story. Out of thirty-six⁵⁴ manors in Wiltshire, Somersetshire, and Devonshire surveyed for the Earl of Pembroke in 1568, it is possible to determine the use made of the demesne on thirty-two, and on twenty-nine of them it was leased. Of twenty-nine other manors examined at random at different periods in the sixteenth and early seventeenth century every one was in the same condition. There is no reason to distrust these instances on the ground that they may represent a development occurring too late in the century to be relevant to movements found in existence at the beginning of it, because in several cases where the history of a manor can be traced backwards, it is clear, as has been shown above, that the leasing of the demesne was quite common at least from the middle of the fifteenth century, and in parts of the country much earlier.

From the allusions made by contemporaries to the large farmer as one

⁵² e.g. at Acklington (*Northumberland County History*, vol v), of which Clarkson the surveyor writes. "Neither is there any demaine lands or demaine meadows, but all is occupied together in husbandry"; at Birling (*ibid*). "There is no demaine land or meadow, with all their husbandlands and meadows appertaining to the same"; apparently also at High Burton. Compare Vinogradoff, *Villainage in England*, p. 316: "Villages without a manorial demesne... are found... where the power of the lord was more a political than an economical one" (Norfolk and Suffolk, Lincoln, Northumberland, Westmoreland, &c.). For a manor where the demesne is kept in the hand of the lord in 1568 for the reason given above, see Roxburghe Club, *Surveys of Pembroke Manors*, Manor of Washerne.

⁵³ *Oxford Studies in Social and Legal History*, pp. 153-154.

⁵⁴ Roxburghe Club, *Surveys of Lands of William, First Earl of Pembroke*.

of the mainsprings of the changes of the period, one is disposed to look first at the demesne for the beginning of capitalist agriculture. Whether, however, the method of cultivating the demesne differed much from the cultivation of the customary holdings depended to a considerable extent upon the terms on which it was leased, and, in particular, upon whether it passed into the control of a single considerable tenant. It would be a mistake to think that the economic relationships which were established when the demesne ceased to be cultivated by villein labour were all of one type, or in particular that the demesne invariably passed into the hands of one holder. Mention has already been made of the practice of adding the demesne lands, or part of them, to the customary land held by copy of Court Roll, a practice which obviously resulted in maintaining in the hands of small cultivators land which might have gone to build up large properties.

Even when the demesne is leased it is not always leased to a single large farmer. In reality the surveys of the sixteenth century reveal two well-defined types of leasehold property subsisting on the lord's demesne, sometimes on neighbouring manors. The first type has as its distinctive feature that the lessees are a number, sometimes a very large number, of small farmers, who have been given allotments on the demesne and who hold them for various periods of years, sometimes for life only, sometimes for eighty, sometimes for ninety-two or ninety-nine, years. Many examples of this type of small leaseholder come from the west of England. Thus at Ablode,⁵⁵ in Somersetshire, before the demesne was leased out by St Peter's to a large farmer in 1515, it had already been leased to seventeen of the customary tenants. At Paynton,⁵⁶ in 1568, the Barton land was held in small plots by fifty-one leaseholders, at South Brent⁵⁷ by eighteen. But examples of this arrangement are found all over England. At Higham Ferrers,⁵⁸ in Northamptonshire, the demesne has been divided among nine tenants, at Stondelf,⁵⁹ in Staffordshire, among thirty-one. At Shape⁶⁰ in Suffolk and Northendale⁶¹ in Norfolk the demesnes are added to the holdings of the customary tenants. At Fornett,⁶² in Norfolk, parts of the demesne are in the same way leased out in small parcels in the fifteenth century for gradually lengthening periods of years, though by the beginning of our period they seem to have been held by copy in the same way as the customary land. Elsewhere we get what appear to be variations of the same system, in the form of sub-letting or of joint-cultivation. At Castle Combe,⁶³ for example, the demesne lands were leased in 1454 to

⁵⁵ *Historia et Cartularium Monasterii Gloucestræ*, vol. iii. App., pp. 291-295

⁵⁶ Roxburghe Club, *Surveys of Lands of William, First Earl of Pembroke*

⁵⁷ *Ibid.*

⁵⁸ R. O. Rentals and Surveys, Portf. 13, No. 34

⁵⁹ R. O. *Land Rev. Msc. Bks.*, vol. c^lxxxv., ff. 70-74.

⁶⁰ R. O. *Misc. Bks. Treas. of Receipts*, vol. cxix., ff. 187

⁶¹ R. O. Rentals and Surveys, Roll 478, No. 3

⁶² Davenport, *History of a Norfolk Manor*

⁶³ Scrope, *History of Manor and Barony of Castle Combe*, p. 208

four tenants, "with the intention that they themselves should let to farm to all the tenants of the lord some portion of those lands." On other manors groups of tenants seem to make themselves jointly responsible for the rent required. It was not an unknown⁶⁴ thing even at quite an early date for a whole village to come forward and make a kind of collective bargain with the lord as to the terms upon which they would take over the demesne lands, and when the leasing of the demesne became the regular practice townships sometimes stepped into the shoes of the bailiffs, and averted the entry of the large farmer by leasing the lands themselves, and making their own arrangements as to the way in which they should be utilised. One may suspect, indeed, that such action took place in a good many cases when the land was leased to many small tenants, as at Paynton and South Brent, even though the intervention of the township is not expressly stated. Sometimes, however, the communal character of the bargain is quite beyond doubt. For example, at Cucklington,⁶⁵ on the manor of Stooke Trister in Somersetshire, twelve tenants leased together at a rent of £8 for forty years a sheep house with 250 acres of land. At Chedsey,⁶⁶ in the same county, the whole of the demesne, which lay mainly in small parcels of one or two acres, was held in 1568 on a twenty-one years' lease by the tenants of the manor. At Caston,⁶⁷ in Norfolk, we find an entry of rent which is paid by "the inhabitants of the town of Scratby for certain lands occupied for their benefit." The phrase "town lands," which appears not infrequently⁶⁸ in the surveys and estate maps of the sixteenth century may perhaps be taken as indicating the same conclusion. In what way exactly we ought to interpret these arrangements—whether we should regard them as nothing more than a summary expression of the fact that all the tenants have severally rights over part of the estate, or whether we should conceive of them as implying some higher degree of corporate action than this, and as the outcome of a bargain struck with the lord by the village as a village, is an interesting and difficult question,⁶⁹ to which we shall recur later in speaking of rights of common. But we may mention two points which suggest that there is in them a certain element of practical communism to which legal historians sometimes do less than justice. The first is that we occasionally

⁶⁴ Vinogradoff, *The Growth of the Manor*, note to chap. ii., Book III., p. 370, and his quotations from Maitland. "The villains of Bright Waltham . . . constituted a community which held land, which was capable of receiving a grant of land, which could contract with the lord, which could make exchange with the lord."

⁶⁵ Roxburghe Club, *Surveys of Lands of William, First Earl of Pembroke*.

⁶⁶ Ibid.

⁶⁷ R. O. Rentals and Surveys, Gen. Ser., Portf. 12, No. 52, p. 10 d.

⁶⁸ See the map of part of Salford, p. 163, and compare R. O. Rentals and Surveys, Gen. Ser., Portf. 27, No. 32 (Lavenham in Suffolk): "Of Township of Tuddenham Free land foldcourse, 6s. 9d." *Ibid.*, Portf. 13, No. 21 (Colly Weston in Northants). "The inhabitants for bushy ground paying two years 1ls. Item, in every third year they pay nothing." At Wymondham (R. O. *Aug. Off. Misc. Bks.*, vol. ccclx., f. 91) one finds under the heading "Towne lands" 38 acres held by copy by the "feoffees of the Vill of Wymondham" (37 Eliz.) in Trust for the school.

⁶⁹ See references quoted below, pp. 192-199.

find certain tenants acting on behalf⁷⁰ of, one might almost say, representing, others. The second is that in some cases the demesne lands are divided among them in exactly equal⁷¹ shares, so that, though every one has more land than before, the relative sizes of their holdings are unaltered. The last fact is a very striking one. It means, in the first place, that the new land has been allotted on some common principle and by some formal agreement. Clearly, if each tenant had bought as much land as he pleased, we should have had not equality but inequality. It points, in the second place, to the enduring strength of the ideas and interests underlying the stem of agricultural shareholding which is characteristic of the mediæval village. We can understand a very primitive system of agriculture designed to secure each household the standard equipment needed to support it. But one would naturally suppose that at the end of the Middle Ages, when new land which had hitherto belonged to the lord was offered to the villagers, each would buy up as much as he could without regard to the interests of his neighbours. It is probable that in most cases, as in those quoted in Chapter III., this is what happened. But in some instances it is not. The old economic ideas which had governed the disposition of the ancient customary holdings are applied to the new land which the cessation of demesne cultivation by the lord throws into the market, and the villagers re-allot it on the old plan. Even in its decay the mediæval land system shows its vitality by meeting new situations with the ancient methods.

These small tenants were described as "farming the demesne," and their existence may perhaps mark a sort of half-way house in the evolution of the manorial demesne into the large leasehold farm. One may suspect that that development was not at all likely to take place rapidly in the circumstances of the fifteenth century. According to the generally accepted

⁷⁰ e.g. Scrope, *History of Manor and Barony of Castle Combe*, p. 203. Extent of Manor, 1454: "Et notandum quod prædictæ terra dominicantes cum pratis et pasturis supra specificatis dimitterebantur ad firmam Ricardio Hallewey, Edwardo Yonge, Johanni Costyn, Willelmo Gaudeby, et Edwardo Noorth, ea intentione quod ipsi dimitterentur firmam omnibus tenentibus domini aliquas portiones dictarum terrarum secundum magis et minus pro earum cultura, et reddunt pro firma inter se cxiiis, viiid."

⁷¹ R. O. *Land Revenue Miss. Bks.*, vol. ccxxi., fol. 1. Survey of Manor of Brigstock (Northants) 4, James I. Here the demesne is held by twenty-two tenants, each having 8 acres, 3 roods, and 1 acre of meadow. Mickelholme meadow (also demesne land) is held by five tenants, each having 1 acre. One finds on some Northumberland manors a growth in the size of customary holdings combined with the preservation of almost exact equality between them, which surely must be taken as proving that the increase in the area held grew, not by sporadic encroachments on the part of individuals, but by definite allotment on some communal plan. Thus at Birling there were in 1248 ten "bondi," each holding 30 acres or one husbandland; in 1498 nine holding 30 acres or one husbandland, and four holding one husbandland of 30 acres between them, in 1567 ten customary tenants, each holding 33 acres; in 1616 the average holding has risen from 33 to 42½ acres, but there is still substantial equality, the largest holding amounting to 44 acres, 3 roods, 3½ poles, and the smallest to 40 acres, 0 roods, 33 poles (I omit the facts as to the cottagers). In spite of two considerable additions to the land of the village there is little change in the relative proportions of the tenancies. At Acklington there were in 1352 thirty-five bondage holdings of 16 acres each, of which nine were vacant (presumably on account of the plague). In 1368 these nine vacant holdings were let to the other tenants for herbage. In 1498 there were eighteen tenants, of whom seventeen held two husbandlands apiece (*i.e.* 32 acres) and one, one husbandland (*s.e.* 16 acres). *Northumberland County History*, vol. v.

view the practice of leasing part of the demesne, though occurring at a very early date on manors where the labour supply was too small for it to be cultivated by the villeins, received a great impetus from the scarcity of labour which was produced by the Great Plague, and went on side by side with the gradual commutation of labour services into money rents. Of course one must not dogmatise about changes which took centuries to accomplish, and which developed at very different degrees of speed in different parts of the country. But the accounts of particular manors supplied us by surveyors bear out the view that the development of a class of small leaseholders took place as the result of the abandonment of the old system of cultivating the demesne by means of the works of the tenants organised under the supervision of the manorial officials. "The lorde departed his habitation and caused his officers to grant out parte of his landes to his tenants at will." "The medowes lying in Hinton were the lordes' severall meadowes, which nowe are divided among the tenants." "When the lorde departed his habitation, and granted out the demesnes, the part was delivered and letten to the use of the tenants" "One Sir John Taverney, Knight, dyd inhabit within the said mannor, and kept great hospitalitie, and occupied the demesnes in his own possession, which are large and greate, and now of late years granted out by copye for terms of lyves among the tenants." Such information, collected by a curious investigator⁷² in the middle of the sixteenth century from the lips of aged peasants in the west of England, takes us back to a time when the leasing of the demesne was a comparative novelty. Is it surprising that the landlord who leased for the first time should prefer to do so on this small scale, should choose to grant plots of land piecemeal for short-terms of years rather than to form a single farm? The practice was at first an experiment, an alarming departure from accepted methods undertaken only through dire necessity. A great catastrophe like the plague might make it profitable, but time would naturally elapse before it was done systematically and on a large scale. At the same time a class of farmers with sufficient capital to manage several hundred acres of land could not come into existence at once. The ordinary villein tenants, who were the first lessees on many manors, could hardly jump immediately from farming twenty or thirty acres to farming a whole estate, though those of them who as bailiffs had previously been responsible for managing the demesne, and who seem sometimes to have managed it as farmers for the lord, rather than as hired servants, were certainly in a better position to do so.

It would seem indeed that the question whether, when the sixteenth century began, the demesne lands of a manor were leased to many small tenants or to one or two large farmers, was decided largely by local and personal conditions, and may fairly be described as a matter of chance. When they lay in many scattered strips unified culture was impossible till

⁷² Humberstone, *Topographer and Genealogist*, vol. i. (surveys *temp. Phil.* and Mary of various manors belonging to the Earl of Devon).

they had been consolidated, and therefore there was no particular reason for leasing them to one tenant rather than to many; whereas, when they were from the start in two or three great blocks, it was obviously very improbable that they would be sub-divided. In those parts of the country where sheep-farming was less profitable than elsewhere one motive for introducing a single large farm was absent, while where the demesne had already been leased in small plots the manorial authorities might dislike to make an abrupt change affecting many households disadvantageously. The general movement would appear, however, to have been in the direction of longer leases and larger tenancies. Thus Miss Davenport has shown that at Fornecett the leasing of the demesne began⁷³ in small parcels and for short periods from the end of the fourteenth century, and gradually took place on a larger scale and for longer periods as the practice became more familiar. The earlier leases of the Oxfordshire manor of Cuxham⁷⁴ alternate between six and seven years in length, and it is not till 1472 that the College owning it appears to have granted a lease of as much as twenty years. Sometimes one can see the system of leasing small parcels to many little farmers, and that of leasing the whole demesne to one large farmer, coming into competition with each other. A case in point comes from Ablode⁷⁵ in Somersetshire. In 1515 the Abbot and Convent of St. Peter's, Gloucester, leased the whole manor of Ablode to a farmer for eighty years. But at the time when the lease was made the demesne lands and demesne meadows were already occupied by the customary tenants. Accordingly the covenant with the farmer provides that as soon as the other tenants' agreements terminate, he shall have the reversion of their lands to use as he pleases. Here the two types of demesne cultivation are seen merging into one another, with the result that the large farm is consolidated out of the small tenancies which preceded it.

At the beginning of our period these small demesne tenancies had already disappeared from many manors, if they had ever existed on them, and the normal method of using the demesne was to lease it to a single⁷⁶

⁷³ Davenport, *History of a Norfolk Manor*, p. 57. When first leased in 1373 the demesne was leased as a whole, but this plan was abandoned. Early in the fifteenth century it was leased in small plots, at first for six or seven years, and then for twelve, twenty, or forty years. Finally parts of the demesne were granted to be held at fee farm.

⁷⁴ Merton Documents, Nos. 3100 (lease of 1361 for seven years), 3002 (lease of 1420 for seven years); 2856 (lease of 1424 for one year); 1874 (lease of 1472 for twenty years).

⁷⁵ *Historia et Cartularium Monasterii Gloucestriae*, vol. iii. App pp. 291-295. The words are "Sed bene licebit prefatis . . . substituere tenentes ad eorum bene placitum in omnibus illis terris dominicalibus supradictis modo in manibus tenantium ibidem existentibus, cum reversio predictarum inde acciderit."

⁷⁶ Thus in 1535, on nineteen out of twenty-two manors owned by Battle Abbey, the demesne was farmed by a single tenant, on one by two, on one by three, while on one it was retained in the hands of the monks (*Oxford Studies in Social and Legal History*, vol. i, *English Monasteries on the Eve of the Dissolution*, by A. Savine). On twenty-five manors out of thirty-two held by the Earl of Pembroke in 1568, the same unified management obtained (Roxburghe Club, *Surveys of Pembroke Manors*). Savine's remarks are to the point: "The lord of the manor seldom divided up the demesne into separate plots of land to be let to local tenants. Usually the demesne and its buildings, sometimes even together with the live and dead stock, passed into the hands of one farmer" (*ibid.*).

large farmer, or at any rate to not more than three or four. In spite of the instances given above, in which the home farm and its lands were split up among numerous small tenants, most of the evidence suggests that the leasing of the demesne to a single farmer was as regular a way of disposing of it in the sixteenth century as its cultivation by manorial officials with the labour of villeins had been in the thirteenth. The very slow development of the large farm in certain parts of the country was due rather to the insignificance or absence of the demesne on some northern manors than to the prevalence of any alternative methods of utilising it. The terms on which the farmer took over the land varied naturally in detail, but these differences are unimportant. In a few cases he holds it by copy. Normally he is a leaseholder, sometimes for life, more usually for a period of years ranging from twenty-one to eighty. Again the lessee's interest may be more or less inclusive. Sometimes only the demesne, including any customary works upon it of the tenants which may survive, is leased. Sometimes the lease includes the live-stock of the manor, which, or the equivalent of which, the farmer must replace at the end of his term. Sometimes the profits of the court are leased as well, though more usually they are reserved, together with any income from fines, to the lord. Sometimes there is an arrangement of great interest and importance by which the whole body of manorial rights, including the income from the courts, confiscation of straying beasts, and the rents of the customary tenants, are leased to the farmer, who thus becomes the immediate landlord of the other tenants.⁷⁷ The greater part of the farmer's rent is by the middle of the sixteenth century paid in money. But certain payments in kind⁷⁸ survive, and supply a link between the vanishing subsistence cultivation, and the growing commercial economy. Where money was scarce, tenants were sometimes allowed to pay in kind as a concession to their interests, and some landlords still found it convenient to receive part of their rent in grain, fowls, pigeons, fish, or a fat bull, a practice which on college estates lasted down to the very end of the seventeenth century. But the value of such payments was carefully calculated in terms of money, and they were the exception.

The growth of large farms had proceeded so far by the middle of the sixteenth century that in parts of the country the area held by the farmer was about equal to that held by all the other tenants. On some manors it

⁷⁷ As at Knyghton in Wilts in 1568 (*Roxburghe Club, Pembroke Surveys*), where the holdings and rents of the customary tenants appear in the farmer's lease, e.g. "Walter Savage ad voluntatem tenet ut parcellam dicti manerii 1 close etc. . . et reddit 5s ad manus dicti firmarii."

⁷⁸ Here is an example from a lease of 1562. The farmer pays "yearly to the lord for the aforesaid farm—

10 quarters of corn, per bushel, 12d.	.	.	.	.	.	.	.	.	.	.	.	.	£4
20 quarters of barley, per bushel, 8d.	.	.	.	.	.	.	.	.	.	.	.	.	10s 8d.
10 quarters of oats, per bushel, 3d	.	.	.	.	.	.	.	.	.	.	.	.	26s. 8d.
20 capons, per caput, 4d.	.	.	.	.	.	.	.	.	.	.	.	.	6s. 8d.
20 pigeons, per caput, 4d.	.	.	.	.	.	.	.	.	.	.	.	.	6s. 8d.
12 great fish called trouts, per caput, 3d	.	.	.	.	.	.	.	.	.	.	.	.	3s."

(Survey of South Newton, *ibid.*).

was less; on others it was a great deal more. The average area of the large farmer's land in Wiltshire seems to have been about 352 acres, and it is not unusual to find manors where there are only two or three customary tenants, while on some there were none at all. Wiltshire no doubt must not be taken as typical of all other counties, as the acreage of the leasehold farms held by men who had capital to spend could so easily be increased by drawing in great tracts from the rolling stretches of Chalk Down. But elsewhere, though the acreage held by the farmer of the demesne is less, 170 or 150 acres, and though one or two of the larger copyholders control a great deal of land themselves, he is still, compared with the bulk of the customary tenants, a Triton among minnows. Arithmetical averages are, however, unsatisfactory, and a better idea of the scale on which the larger farmer carried on business may be obtained from the following table:—

TABLE II

	Under 50 Acres	50-99 Acres	100-149 Acres	150-199 Acres	200-249 Acres	250-299 Acres	300-349 Acres	350-399 Acres	400-449 Acres	450-499 Acres	500-549 Acres	550-599 Acres	600-649 Acres	650-699 Acres	700-749 Acres	750-799 Acres	800-849 Acres	850-900 Acres
Eighteen farms on sixteen manors in Norfolk . . .	2	2	3	1	3	1	2	2	2	3	.	.	.	1	.	.	.	.
Thirty-one farms on twenty-three manors in Wiltshire . . .	4	2	4	4	3	4	3	2	1	1	.	.	.	.	1	2	.	.
Eighteen farms on thirteen manors in several counties . . .	2	3	3	1	3	2	1	.	3	.	.	.	.	.	...	...	.	.
Total, sixty-seven farms on fifty-two manors . . .	6	7	9	8	7	6	7	1	2	6	4	.	.	1	1	2	.	.

It will be seen that if all the farms are grouped together, rather more than one half, thirty-seven out of sixty-seven, have an area exceeding 200 acres, and that the area of rather more than a quarter exceeds 350 acres. The figures must be read with the caution that they in some cases certainly underestimate the real extent of the land used by the farmer, as rights of common often cannot be expressed in terms of acres.

(c) *Enclosure and conversion by the manorial authorities*

When we turn from the agricultural arrangements described in previous chapters to examine these large farms, we enter a new world, a world where economic power is being slowly organised for the exploitation of the soil, and where the methods of cultivation and the standards of success are quite different from those obtaining on the small holdings of

the peasantry. The advantage to the lord of the system of large farms, compared either with the retention of the demesne in his own hands, or with the leasing of it in allotments to small tenants, was obvious enough for its extension to be no matter for surprise. The utilisation of the produce of the demesne by the lord's household was unnecessary when markets were sufficiently reliable to offer a regular supply, and inconvenient when the landlord was an absentee. The division of the estate among small tenants meant the creation or maintenance of interests opposed to agricultural changes, and made it impracticable to vary the methods of agriculture to meet varying demands, except by the rather cumbrous process of a common agreement ratified in the manorial court. The leasing of the demesne to a large farmer got rid of those disadvantages. The lord was secured a regular money income, which was considerably higher per acre than that got from the customary tenants; and since the land was under the management of a single individual, who was sometimes equipped with a good deal of capital, it was much easier to try experiments and to initiate changes. When not only the demesne, but the whole body of manorial rights, was included in the lease, the property became of that most desirable kind, in which ownership is attenuated to a pecuniary lien on the product of industry, without administrative responsibility for its management.

Opportunities for new methods of cultivation were afforded by the leasing of the demesne to a single farmer, which would lead us to look at his holding as the place where agrarian changes were most likely to begin, and to start from that in order to trace the effect of these large properties on the small properties of the customary tenants. On the one hand, any wide development of leasehold tenure involves a certain mobility in rural society and a disposition to break with routine. There must be a market for land, which again implies that some class has accumulated sufficient capital to invest and has got beyond mere subsistence farming. It naturally arises either when new land is brought into cultivation, or when the development of trade makes farming for the market profitable, or when changes are being introduced into the methods of agriculture, or when the value of land is uncertain (for example, when it is thought that it may contain minerals),⁷⁹ because in all these cases leasehold, being a terminable interest, enables the owner of land to adjust his rent to the tenant's returns. On the other hand, the landowner does not get the full advantage of the elasticity in rent and management that leasehold tenure makes possible, unless the tenant is a man of some substance, who can spend capital in cultivating land on a large scale, in stocking a farm with sheep and cattle, in carrying crops until the best market is found, and in making experiments in new directions.

⁷⁹ See *Northumberland County History*, vol. ix., account of Cowpen, and *Victoria County History*, Lancashire, article on Social and Economic History. For the same reasons mills and fisheries were naturally the first parts of a mediæval manor to be leased for terms of years.

One can easily understand the reasons which favoured the large farm, if one reflects on the change in economic environment, the outlines of which have been already described. The most important economic cause determining the unit of landholding is the nature of the crop to be raised and the methods used in producing it, and the nature of the crop depends mainly on the conditions of the market. Now in the sixteenth century the market conditions were such as to leave room for a large number of small corn-growers, because trade was so backward that a great number of households farmed simply for subsistence. On the other hand, even in the case of corn-growing, the size of the most profitable unit of agriculture was increasing with the development of an internal corn trade—a development which is proved by the strenuous attempts which the Government made to regulate it through the Justices of the Peace; while in the case of sheep and cattle grazing on the large scale practised by the graziers of the period, there was obviously no question but that an extensive ranch, which could be stocked with several thousand beasts, was the type of holding which would pay best. That a class of capitalist farmers of this kind was coming into existence in the sixteenth century is indicated both by the complaints of contemporaries that small men find farms taken over their heads by great graziers, who have made money in trade; by the fact that the stock and land lease, a form of metayage under which the working capital was supplied by the landowner, had given way on many manors to the modern type of lease under which it is provided by the lessee;⁸⁰ and by the way in which one farmer would become the lessee of two⁸¹ or more manors, a clear indication of the existence of wealthy men who had money to invest in agriculture. It was the substitution of such a class for the small leaseholders among whom the demesne had often been divided, and their appearance for the first time on manors where the demesne had been kept in the hands of the lord until it was leased to one large farmer, which gave a rapid and almost catastrophic speed to the tendency to enclosure which, as we have seen, was already going on quietly among the small tenants, because it meant the control of a growing proportion of the land by persons who had capital to spend, and who, since they held their farms by lease, not by copy, were under the pressure of competitive rents to adopt the methods of agriculture which were financially most profitable. This in itself was a new phenomenon, at least on the large scale on which it appeared in the sixteenth century. In modern agriculture one is accustomed to seeing the area sown with any crop varying according to movements in the market price of the produce, so that on the margin of cultivation land is constantly changing its use in

⁸⁰ Owing to the advantages which the small holding has for dairy purposes (personal attention to cattle, &c.), it is still the custom in parts of the country, e.g. Devonshire, for the large farmers to sublet small dairy farms out of their holdings, and to supply the lessee with all the stock, including the cows and the cottage. See Levy, *Large and Small Holdings*, chap. ix.

⁸¹ Several examples of this are to be found in the *Pembroke Surveys*. Contemporaries called it "the engrossing of farms."

response to changes in the world's markets. But such adaptability implies a very high degree of organisation, and when farming was carried on mainly by small producers for their own households, the reaction of changing commercial conditions on the supply was much slower, and cultivation was to a much greater extent a matter of routine. It was the development of the large capitalist farmer which supplied the link binding agriculture to the market and causing changes in prices to be reflected in changes in the use to which land was put.

The tendency which we should expect to find represented most conspicuously upon the demesne farms is of course that enclosing of land and laying of it down to pasture, which is lamented by contemporaries. The word "enclosing," under which contemporaries summed up the agrarian changes of the period, has become the recognised name for the process by which the village community was broken up, but it is perhaps not a very happy one. Quite apart from the difficulties which it raises when we come to compare the enclosures of the eighteenth century, which were made under Act of Parliament, with those of the sixteenth century, which were made in defiance of legislation, it is at once too broad and too narrow to be an adequate description even of the innovations of the earlier period, too broad if it implies that all enclosures entailed the hardships which were produced by some, too narrow if it implies that the only hardships caused were due to enclosure. It selects one feature of the movement towards capitalist agriculture for special emphasis, and suggests that the hedging and ditching of land always produced similar results. That, however, was by no means the case. Enclosure might take place, as has been shown above, without producing the social disturbances usually associated with it, provided that it was carried out by the tenants themselves, and with the consent of those affected. The concentration of holdings and the displacement of tenants might take place without enclosure. On a desert island there is no need of palings to keep out trespassers; and a manor which was entirely in the hands of one great farmer was a manor where the maintenance of enclosures was almost unnecessary. At the same time the word does describe one of the external features which usually accompanied the agrarian changes. The general note of the movement was the emancipation from the rules of communal cultivation of part or all of the land used for purposes of tillage or pasture. The surface of a manor was covered with a kind of elaborate network of rules apportioning, on a common customary plan, the rights and duties of every one who had an interest in it. A man must let his land lie open after harvest; he must not keep more than a certain number of each kind of beasts on the common; he must plough when his neighbours plough, and sow when his neighbours sow. The effect of the growing influence of the capitalist farmer was to clear away these organised restrictions from parts of the manor altogether, and violently to shake the whole system. Enclosing was normally the external symptom of the change, for the

practical reason that the simplest way of cutting a piece of land adrift from the common course of cultivation, or from the rules laid down for the use of the commonable area, was to put a hedge round it, partly to keep one's own beasts in, partly to keep other people's beasts out. The essential feature of the change was that land which was formerly subject to a rule prescribing the methods of cultivation became land which was used at the individual's discretion.

The agent through whom enclosing was carried out was usually the large farmer. When the farmer leased only the demesne lands, and the demesne lands lay in large compact blocks, not in scattered strips, he could naturally practise the new economy of enclosure upon them without colliding with any other interest, except in the cases where they were divided into several tenancies; while if steps were taken to get rid of the interests which the customary tenants had either in the open fields, in the meadows, or in the common, the land lost by them was normally added to the area which the farmer leased, and enclosed by him. In the surveys of the period one finds manors in every stage of the transition from open field cultivation to enclosure, and though such individual instances tell us nothing of the extent of the movement, they offer a vivid picture of what enclosing meant, and give the impression that enclosure had usually proceeded further on those manors where the farmer held the largest proportion of the land. The slowness of the movement towards enclosure on the holdings of the customary tenants has already been described. As a contrast to it one may look at the following table, which sets out the condition of things on some demesne farms:—

TABLE III

Number of Demesne Farms Examined	No signs of Enclosure	Under 5 per Cent. Enclosed	5 per Cent. to 24 per Cent. Enclosed	25 per Cent. to 49 per Cent. Enclosed	50 per Cent. to 74 per Cent. Enclosed	75 per Cent. to 99 per Cent. Enclosed	100 per Cent. Enclosed
47	12	9	7	7	.	4	8

These figures are not offered as any evidence of the absolute area enclosed in the counties represented. They may, however, perhaps be taken as an indication that the demesne farm was usually that part of the manor on which enclosure was carried out most thoroughly. Thirty-one of the manors included in the table are in Wiltshire and Norfolk, and where the conditions of things on the tenants' holdings can be compared with that obtaining on the demesne, it is almost always the case that the new economy has spread furthest on the latter. Neither in Wiltshire nor in Norfolk had enclosure by the peasants themselves proceeded very far in the latter half of the sixteenth century.

The conditions, however, on different manors varied so enormously that much weight cannot be laid on these figures, and it is both more important and more practicable to examine particular examples of the ways in which the large enclosed estate was built up. In the first place, then, one may say with some confidence that those parts of a manor which lent themselves most readily to enclosing were the waste, the common pasture, and the common meadow, while the enclosing of the farmer's holdings of arable land took place more gradually, less thoroughly, and with greater difficulty. Thus selecting from the manors tabulated above those in which the quality of the land enclosed is distinguished, and omitting those where it is merely stated to lie "in closes," one finds that partial or complete enclosure of the arable has been made on nine, of the meadow on eleven, and of the pasture on twenty, manors. The explanation of this is to be found by recollecting the characteristics of the organisation into which the farmer stepped. The arable land which formed the lord's demesne was often scattered, like the tenant's, in comparatively small plots over the three fields, unity of ownership did not by any means necessarily imply unified culture, and before these could be enclosed they had to be consolidated into fewer and larger blocks. Moreover, if the object of enclosure was conversion to pasture, it must be remembered that the enclosure of the arable implied a very great revolution in the manorial economy. A farm which was well equipped for tillage had barns, granges, agricultural implements, which would stand idle if the arable land was enclosed for pasture, and it was therefore natural that, as long as other land was available in sufficient quantities for sheep-farming, such land should be enclosed for the purpose, before the ordinary course of cultivation on the arable land was abandoned. The common meadows and the common wastes did not offer these obstacles to enclosure. Since the individualising tendencies of personal cultivation did not operate upon these parts of the village land, the method of securing equal enjoyment of them had not been, as in the case of arable, to give each household a holding consisting of separate strips scattered over good and bad land alike, but to give each holder of an arable share access to the whole of the pasture land. They were, therefore, usually not divided and scattered to anything like the same extent, and it was thus much easier for the rights of different parties over them to be disentangled, and for the land to be cut up and enclosed "in severalty." Hence, where the tenants are most numerous, and where there are fewest signs of change, the effect of the large farmer is often seen in the withdrawal of part of the common waste from communal use. If the growth of sheep farming made the small tenants anxious, as in many cases it did, to acquire separate pastures for their flocks, it can readily be understood that the large farmer, who had more to lose and more to gain, was likely to pursue the same policy unless checked by organised opposition. Normally the change seems to have taken place by converting the right to pasture a certain

number of beasts in common with other tenants into the right to the exclusive use of a certain number of acres. Instead of the whole commonable area lying open to a number of animals "stinted" in a certain proportion among the commoners, the stint is abandoned, and the basis of allocation is found not in a fixed number of animals, but in a fixed area of land, which forms the separate common of the individual farmer, and which is naturally enclosed. Many examples of this division of commonable land are found in the surveys, especially in connection with the common waste of the manor, which enable us to trace the change from collective to individual administration. Thus, to give a few instances, at Winterbourne Basset⁸² the farmer has all the meadow land except one half-acre, and a separate close of 140 acres on the downs, where he can graze nearly three times as many sheep as all the customary tenants. At Knyghton⁸³ he has enclosed with a hedge part of the sheep's common, no sheep at all being kept by the customary tenants. At Massingham,⁸⁴ in Norfolk, where much of the demesne arable lies "in the fields," there is an enclosed pasture containing 123½ acres, and on another farm of 203 acres, which has apparently been formed out of the demesne, one finds 28 acres of arable "in the fields" and 65 acres of "pasture enclosed," the remaining 80 acres lying "in the sheep courses." The best picture of what the change meant is given by the two maps⁸⁵ printed opposite. In No. III the meadow, save for a small piece used exclusively by All Souls, is common, each tenant presumably being allowed to place so many beasts upon it. In No. IV the meadow has been divided up among the tenants, and instead of pasturing a limited number of beasts on the whole of it, each can pasture as many beasts as he pleases on part of it. It is not necessary to point out the significance of this change from the point of view of the social organisation of rural life. It means that communal administration of part of the land has been abandoned and its place taken by use at the discretion of the individual tenant.

But while the pasture ground and meadow offered special facilities for enclosure, there is abundant evidence that the farmer's arable land was also in many cases enclosed. On some manors the whole of the arable demesne lay together, and in that case there was no obstacle in the way

⁸² Roxburghe Club, *Surveys of Lands of William, First Earl of Pembroke*. The farmer has four closes of meadow amounting to 9 acres, one meadow of 2½ acres, one meadow of 7 acres, one meadow of 8½ acres. In addition to that and the hilly pasture, there is in his possession "unus campus noviter inclusus, qui aliquando seminatur, aliquando iacet ad pasturam," and which "olim sustentare potuit 900 oves et catalla non extenta."

⁸³ *Ibid.*, "De terra montanea unde pars includitur cum sepe iuxta Crowcheston continens per estimationem 100 acres, et custodire potest supra prædictam 900 oves." Sometimes it is expressly stated that the farmer alone is to have a certain pasture, e.g. at Chalke (*ibid.*). "Et etiam dictus firmarius habet ibidem unum montem vocatum a Doune et bene cognitum est quia circumiectum est per sepon et bundas, et custodire potest 600 multones quia nullus habet communiam in eo nisi firmarius solus, et continet per estimationem 200 acres."

⁸⁴ R. O. Rentals and Surveys, Gen. Ser., Portf. 24, No. 4, f. 46 (*temp. Hen. VIII.*). "The fold course will carry 1800 sheep at £8 a hundred."

⁸⁵ In All Souls' Muniment Room [Editor's note The maps referred to in the text are not contained in this reprint.]

of enclosing it. More usually it lay in three pieces, one block in each of the three great fields, and here again, when there was sufficient motive for enclosure, enclosure was easily practicable. The only arrangement which offered a really difficult problem was that in which it was divided into acre and a half strips scattered about the manor at a distance from each other. One finds cases in which such strips numbered several hundred, but the impression given by surveys is that, at any rate by the middle of the sixteenth century, such extreme subdivision was exceptional, and that the consolidation of holdings by means of exchange and purchase, which we have seen at work from an early date on the holdings of the customary tenants, had often proceeded so far on the demesne as to have rounded off the farmer's property into comparatively few large holdings. As an illustration of the first steps towards unification and enclosure we may take the manor of Sparham,⁸⁶ in Norfolk, which was surveyed about 1590.⁸⁷ Here the 189 acres which compose the demesne, and which are leased to a farmer, are still much scattered. They lie in seventy different pieces, most of which are quite small, acres, half-acres, and roods. But even here there has been a considerable amount of consolidation, and it has been followed by the beginnings of enclosure. The 37½ acres of pasture lie in five pieces of 11, 9, 7, 5, 5½ acres, all of which have been enclosed. The arable is still intermixed with the strips of the other tenants in the open fields. But on the arable itself consolidation and enclosure are creeping forward. There are four strips lying together which comprise 6¾ acres. There is one enclosure, consisting of arable, wood and meadow, and containing 17 acres. The neighbouring manor of Fulmordeston⁸⁸ offers an example of a state of things in which the same tendency has worked itself out to completion. The 742 acres leased by the farmer of the demesne are entirely enclosed. There are two woods comprising 50 acres. There is an enclosure of 250 acres, 35 perches, consisting of "Corne severall and Broome severall." There is a "great close" of 130 acres, 1 rood, "longe close" of 57 acres, 3 roods, "Brick kyll close" of 40 acres, 1 rood, "Brakehill close" of 24 acres, 1 rood, a field of 106 acres called Hestell, and another of 83 acres, 2 roods. But these different stages are best illustrated by maps⁸⁸ Nos. I., III., IV., V., and VI.

On No. III. it will be seen that there is a good deal of subdivision. On Nos. IV. and V. the tenants whose strips separated parts of the demesne from each other, have in many cases dropped out, so that the process of aggregation is facilitated: on No. I. the concentration of the demesne into a single large block is complete; though it is still unenclosed, it offers no obstacle to enclosure: on No. VI. consolidation has been followed by

⁸⁶ MSS. of the Earl of Leicester at Holkham, Sparham Documents, Bdle No. 5.

⁸⁷ *Ibid.*, Fulmordestone Documents, No. 59. Description of manor at bottom of map (1614)

⁸⁸ In All Souls' Munitment Room. [Editor's note: The maps referred to in the text are not contained in this reprint.]

enclosure, conversion to pasture and depopulation. Between the state of things on map No. III. and that on map No. VI. there is the greatest possible difference. Yet there is no reason to doubt that Whadborough had once been an open field village with tenants who were mainly engaged in tillage. Map Nos. IV., V., and I. are, as it were, the intervening chapters which join the preface to the conclusion. Occasionally one can see the process of consolidation, which was the necessary preliminary of enclosure, actually taking place. At Harriesham,⁸⁹ in Kent, the parson held 3 acres of glebe land in two pieces, one of them lying in the middle of a field belonging to another tenant, who ploughed up its boundaries and added it to his own land. Accordingly, to prevent uncertainty in the future, the owner of the field and the parson executed a deed by which the latter surrendered his claim to the detached pieces of land, and in return got three acres laid out in a single plot. In view of the large blocks which are often held by the farmer of the demesne, one cannot doubt that such consolidation by way of exchange must have been a common arrangement.

It remains to ask how far the type of economy pursued by the large farmer differed from that of the smaller tenants, and in particular whether there are signs of his specialising upon the grazing of sheep. The most complete picture of the agricultural changes of the early sixteenth century, not on the demesne farms alone, but on the holdings of all classes of tenants as well, is given in the well-known returns⁹⁰ made by the Commissioners who were appointed by Wolsey in 1517 to investigate enclosures, and these are supplemented by the figures published by Miss Davenport⁹¹ as to the relative proportions of arable and pasture land on certain Staffordshire estates. The interpretation of both of these sets of statistics is ambiguous. Mr. Leadam uses them to show that much enclosing took place for arable, and that therefore the statutes and writers of the period exaggerated the movement towards pasture farming. Professor Gay thinks his conclusions untenable, and that a proper interpretation of the Commissioners' returns corroborates the view of contemporary writers that pasture was substituted for tillage on a large

⁸⁹ Maps in All Souls' Munitment Room: "The description of the parsonage of Harriesham in the countie of Kent, with the glebe lands therunto belonging." Note on back of map: "Memorandum that whereas there are and always have been 4 parcelles of land in Mr. Steed his fielde called Harriesham field belonging unto the parsonage of Harriesham, conteyninge by estimation three acres, whereof the one did lye along by the landes of Sir Edward Wootton, called the Cowe dounre, the other . . . aburthen on the said Cowe dounre toward the east, the other boundes thereof not being certainly known by reason that they were plowed up by one Robert Brinkley, tenant of the whole field, and were laid out by Robert Brinkley as in the Platte doth appeare under the Redd colour; It is now covenantied by the said Mr. Steede and Mr. George Hovenden, incumbent there, by deed bearing date the 20th of July in the 17th year of the Queen's Majestie's reign, that nowe all that the said three acres shall from henceforth be possessed by the parson and his successors for ever in manner and form as it is nowe laid out in the platte in the yellow colour after the maner of a square" [here follow the boundaries].

⁹⁰ Leadam, *Domesday of Enclosures*. For a discussion as to whether they suggest that enclosing took place for arable or pasture, see *Trans. Royal Hist. Soc.*, New Series, vol. xiv.

⁹¹ *Quarterly Journal of Economics*, vol. xi.

scale. Two points emerge pretty clearly from the controversy. The first is that there was a good deal of redistribution of land with the object of better tillage, of the kind which has been described above, and that probably the fact that the word "enclosure" was used to describe this, as well as the conversion of arable to pasture, was responsible for some confusion. The second is that the predominant tendency was towards sheep-farming. To suppose that contemporaries were mistaken as to the general nature of the movement is to accuse them of an imbecility which is really incredible. Governments do not go out of their way to offend powerful classes out of mere lightheartedness, nor do large bodies of men revolt because they have mistaken a ploughed field for a sheep pasture. Even if we accept Mr. Leadam's statistical analysis of the report of the Commission of 1517, his figures still reveal a great deal of conversion to pasture; and it is clear that many cases on which his totals rest are open to more than one interpretation.

If the general correctness of the view of the sixteenth century observers that there was a wide movement towards sheep-farming is accepted, it ought to be represented more fully on the demesne farms than elsewhere, because changes could be applied to them with much less friction than to the lands in which the interests of other tenants were involved. With a view to showing to what extent this is the case two sets of figures are given below; the first is a table taken from Dr. Savine's⁹² work on *The English Monasteries on the Eve of the Reformation*, and relates to the demesne lands of forty-one monasteries which were surveyed for the Crown on the occasion of their surrender, some were apparently in the hands of the monastery and some apparently were leased. The second gives the approximate use to which land was put by the farmers of the demesnes on forty-nine manors in the sixteenth and early seventeenth centuries. They are subdivided in three groups, (a) manors in Norfolk and Suffolk, (b) manors in Wiltshire and Dorsetshire (one), and (c) manors in other southern and eastern counties, but including one in Staffordshire and one in Lancashire. For purposes of comparison the table given in Part I. Chapter III., illustrating the use made of the customary holdings, is repeated here:—

TABLE IV

I

Total Demesne Land of Forty-one Monasteries	Arable	Pasture	Meadow
Acres 16780	Acres 6235½ (37 1%)	Acres 8691½ (51 7%)	Acres 1852¾ (11 0%)

⁹² *Oxford Studies in Social and Legal History*, vol. i. pp. 171-173

II

Total Acreage of Sixty-five Farms on Fifty Manors (Fractions of Acres omitted)	Arable	Pasture	Meadow	Closes	Indeterminate
Acres 16866	Acres 8302 (49 2%)	Acres 6172 (36.5%)	Acres 1528 (9%)	Acres 624 (3 6%)	Acres 240 (1 3%)

COMPOSED OF (a) THIRTY-TWO FARMS ON TWENTY-THREE MANORS IN WILTS AND ONE MANOR IN DORSET

Total Acreage of Thirty-two Farms	Arable	Pasture	Meadow	Closes	Indeterminate
Acres 8812	Acres 4390 (49 8%)	Acres 2928 (33 2%)	Acres 754 (8 3%)	Acres 500 (5.6%)	Acres 240 (2 7%)

(b) SIXTEEN FARMS ON THIRTEEN MANORS IN NORFOLK AND SUFFOLK

Total Acreage of Sixteen Farms	Arable	Pasture	Meadow	Closes	Indeterminate
Acres 4361	Acres 2393 (52%)	Acres 1707 (39%)	Acres 261 (5 9%)	Acres	Acres

(c) SEVENTEEN FARMS ON THIRTEEN OTHER MANORS MAINLY IN SOUTH AND MIDLANDS

Total Acreage of Seventeen Farms	Arable	Pasture	Meadow	Closes	Indeterminate
Acres 3691	Acres 1519 (41 1%)	Acres 1536 (41.1%)	Acres 512 (13 8%)	Acres 124 (3 3%)	Acres

III

Total Acreage of Customary Holdings on Sixteen Manors	Arable	Pasture	Meadow	Closes	Indeterminate
Acres 7786	Acres 6841 (87 7%)	Acres 555 (7.1%)	Acres 390 (5.1%)	Acres	Acres

The figures in this table do not pretend to complete accuracy, but their classification of the distribution of land between different uses is not far wrong. Of the customary tenants' land about 87 per cent. is arable, and

12 per cent. meadow and pasture. Of the farmers' land about 49 per cent. is arable, 36 per cent. pasture, 9 per cent. meadow. The proportion of pasture to arable is somewhat higher in the southern and midland counties than it is in East Anglia; but the cases examined are too few to allow of any conclusion being drawn from this fact. Without pushing the figures in either table further than they will go, one may suggest that they seem to imply, in the first place, that the large farmer was by no means always a grazier, and that the writers of the period who spoke as though all large-scale farming meant the conversion of arable to pasture were guilty of some exaggeration. In a good many cases the methods of cultivation pursued by the farmer of the demesne differed from those of the customary tenants only in the fact that his holding was larger; as a matter of fact the customary tenants on some manors deserve the name of grazier better than the farmer of the demesne upon others.

But they suggest, in the second place, that these cases were exceptional, and that, on the whole, arable farming played a much more important part on the holdings of the customary tenants than it did on those of the farmers. The former subsisted mainly on the tillage of the land in the open fields. The latter, though they had often much arable, sometimes had none, or next to none at all, and relied to a far greater extent on the opportunities for stock-breeding offered by pasture and meadow land. These figures, however, include some derived from manors where tillage was virtually the only sort of farming carried on, and they do not give any idea of the arrangements prevailing on an estate where pasture-farming had been pushed far. Taking from the fifty manors dealt with above, the twelve which are most typical of the new régime, one gets a very different picture—

TABLE V

Land Held	Arable	Meadow	Pasture	Closes	Other (Wood, &c.)
Acres 4474	Acres 922 (20 6%)	Acres 403 (8 9%)	Acres 3065 (68 3%)	Acres 71 (1 5%)	Acres 13

Here arable forms only 23 per cent. of the whole area, while pasture and meadow together form over 77 per cent. This swing of the pendulum from arable husbandry to pasture-farming will not surprise us, if we remember that at the time of the Domesday Survey, and, indeed, throughout the Middle Ages, the area of land under the plough had been, when considered in relation to the population, extraordinarily large. The economic justification of ploughing land which no modern farmer would touch had lain in the fact that the impossibility of moving food supplies had made it necessary for each village to be virtually self-supporting, and had thus prevented the specialisation of districts in different types of

agriculture. When the development of trade under the Tudors had combined with the keen demand for wool to introduce a geographical division of labour, the change was naturally all the more violent, because there was, so to speak, so much lee-way to be made up, because so much land was in tillage which had no special suitability for the production of grain. Even so, between 1815 and 1846, the rich water meadows of Oxfordshire were being ploughed up for corn. Even so, after 1879, the collapse of corn-growing was all the more disastrous, because it had been so long delayed.

One would expect the growth of large farms side by side with the customary holdings, especially when the methods of agriculture employed were so different, to result in a powerful reaction of the new interests upon the old, and perhaps in a collision between them, even when no deliberate attempt was made to alter the position of the tenants. And this is what we are told in fact occurred. The customary tenants' holdings and the demesne both formed part of one area, subject to certain rights and privileges defined by the custom of the manor. Both, for example, would lie open to the village cattle after harvest; both were subject to the customary rotation of crops, and necessarily so when the demesne was not separate but mixed with the customary holdings in the open field; both had rights of common on the pasture or waste of the manor. Moreover, the whole organisation of the economic side of manorial life was based on the assumption that tillage was the most important element in it. For example, the apportionment of rights over the waste, the "stint" of animals to be grazed, assumed that no one partner would require to graze more than a certain number, and broke down if he gave himself up to cattle-breeding or sheep-farming, and multiplied his beasts by five or ten. It would be natural, therefore, to look for a straining and shifting of those rights as a probable consequence of the existence side by side of two such different agricultural stages, and of such different types of property. Formerly the respective interests of the lord and the customary tenants had been harmonised by the fact that the labour of the latter supplied the chief means of cultivating the demesne, and that the demesne could hardly be a profitable concern if the number of tenants or their standard of living declined very largely, any more than a gold-mine can pay without gold-miners. But when the demesne was largely used for pasture this consideration of course did not apply, and in any case by the sixteenth century, although the services of the tenants were still part of the means by which the farmers found labour, they were probably an unimportant one. As is shown by the smallness of the holdings on many manors, which were quite insufficient by themselves to support a family, and by the evidence of contemporaries, the farmer had a growing, though still small, labour market into which to dip, and the rough agreement which had existed between the interests of the manorial estate and those of the tenants was therefore no longer existent. Thus a collision of in-

terests, a weakening of communal restrictions before the enterprise of the capitalist farmer, the strengthening of some kinds of property and the weakening of others, and the growth of new sorts of social relations in the villages, were consequences to be expected from the increasing predominance of the large farm, and especially of the large pasture farm.

To sum up the arguments of the chapter. At the beginning of the sixteenth century forces both political—the restriction of the territorial sovereignty of the landlords—and economic—the growth in the demand for wool—were working to produce a change in the methods of agriculture and at any rate by the middle of the century another powerful motive was added by the fall in the value of money. The result was that there was a movement in the direction of converting arable land to pasture, and of enclosure, which affected all classes of landholders, but which was carried furthest by the large farmers who leased the demesne lands of manors, who could afford to make experiments, and who were under a strong incentive to turn the land to its most profitable use.

II. The Reaction of the Agrarian Changes on the Peasantry

(a) *The removing of landmarks*

THE history of the agrarian problem in the sixteenth and seventeenth centuries—indeed its history ever since—is largely the story of the small cultivator's struggle to protect his interests against the changes caused by the growth of the great estate. In that struggle there is much that is detailed, tiresome, and obscure. The student hears very little about general principles, very much of technicalities about the nature of common appendant and common appurtenant, of stinted and unstinted pastures, of gressums and fines, of copyholds for years, for lives, or of inheritance, of land which is old enclosure that ought to stand, or new enclosure that ought to fall. But at the centre of this maze of dry and infinitely diverse details there is a real regrouping of social forces going on, and a rearrangement, at once rapid and profound, of economic and political ideas. We must no more picture the changes of our period as mere matters of the technique of agriculture, than we must think of the industrial revolution of two centuries later in terms of spinning-jennies and steam-power. On the contrary, these very details are the channel along which rural life is beginning to slip from one form of economic organisation to another, the seed-plot in which new conceptions of social expediency are being brought to maturity. In numberless English villages between 1500 and 1600 large issues are being decided which will profoundly modify the course of social development. Is the communal administration of meadow and wastes to survive (as it has survived in France and Belgium) or is it to disappear? Is England to be a country of large cultivators working with many hired labourers, or of small cultivators working with few? Is leasehold or copyhold to be the predominant form of land tenure? When the final transition to modern agriculture takes place, will England face the change with a population the bulk of which has been rooted in the soil since the Middle Ages, or will the middle classes in rural society have been already so far undermined that opinion turns spontaneously to the great landlord as the sole representative of agricultural progress? Of course the answer to these questions was not given by 1600 or even by 1700; we must not forget Arthur Young and the far more extensive enclosures of the eighteenth century. But in our period development certainly took a distinct bias away from one set of arrangements and in the direction of another. The best standpoint from which to

examine its course is found by watching the reaction upon the tenants of the agricultural changes which we have tried to summarise in the preceding sections.

The economic effect of the policy pursued by the large farmer depended upon what proportion of the land he controlled, and in particular upon the part of the manor upon which enclosure was made. He might enclose only the land actually belonging to the demesne farm when he took it over; or he might enclose parts of the waste or meadow over which other tenants had rights of pasture; or he might enclose the holdings in the open arable fields belonging to other tenants, for this purpose evicting, or inducing the lord to evict, them. When only the demesne lands were enclosed the other interests were sometimes little disturbed, unless indeed the demesne had already been parcelled out among some of the smaller tenants, a contingency to be considered later. But, even when that was not the case, the conversion of the demesne to pasture and its enclosure had two consequences which were not unimportant. On the one hand, the wage-earning population of cottagers and younger sons, who had found employment as hired labourers when the demesne was used for tillage, were thrown out of work, and with the limited demand for labour offered by a sixteenth century village, were obliged, one would suppose, to join the armies of tramps who figure so largely in the pages of the writers of the period. As the bailiff's accounts of some manors show, the demesne farm had sometimes employed a quite considerable staff of workmen of different kinds, and though no clear instance of a reduction of the number of employees, consequent on the transition to pasture farming, has come to light, one can occasionally compare the demand for labour under the old régime and under the new in a way which does something to substantiate the lamentations of contemporaries.¹ It is this which gives point to their complaints as to the decay of "hospitality." Hospitality in the sixteenth century does not merely mean a general attitude of open-handed friendliness. When the Government intervenes to enjoin hospitality, we are not to think that, even in that age of grandmotherly legislation, it is going out of its way to insist that every man shall provide his neighbour with a glass of beer and a bed for the night. Hospitality has a quite precise meaning and a quite definite social importance. It is, in the most literal sense, housekeeping, and the household does not merely imply what we mean by "the family," a group of persons connected by blood but pursuing often quite separate occupations, and, except in the small number of cases where property owned by the head of the family supplies a financial basis for unity, possessing quite separate economic interests. It is, on the contrary, a miniature co-operative society, housed under one roof, dependent upon one industry, and including not only

¹ The Shepe Book of Tittleshall Manor (Holkham MSS., Tittleshall Books, No. 19), shows flocks of 500 to 1000 sheep being managed by a single shepherd, 1543-1549.

man and wife and children, but servants and labourers, ploughmen and threshers, cowherds and milkmaids, who live together, work together, and play together, just as one can see them doing in parts of Norway and Switzerland at the present day. When the economic foundations of this small organism are swept away by a change in the method of farming, the effect is not merely to ruin a family, it is to break up a business. It is analogous not to the unemployment of an individual householder, but to the bankruptcy of a firm.

On the other hand, even when they lost nothing else, the rest of the landholding population was deprived of some of the rights of grazing which they had exercised on the enclosed arable after harvest. If the demesne formed a large proportion of the whole area of the village, or if there was little other pasture, their loss, as the frequent complaints of interference with "shack"² prove, might be a very considerable one; for it meant that there might be no means of feeding some proportion of the village beasts. Moreover, the mere presence of a large capitalist, who controlled a great part of the land, and converted it to pasture or retained it as arable according to the price of wool and wheat, prejudiced them in various indirect ways. The farmer of the demesne seems at an early date to have had a bad name for hard dealings. He was often a stranger, and therefore indifferent to the influence of local customs and personal relationships. Where the manorial officials had offered direct employment, he was a middleman with a high rent to pay, and, like most middlemen, a channel for pressure without responsibility. As the largest shareholder in the small agricultural community, he could disturb its arrangements by altering his course of cultivation, and, since he was the representative of the lord, he could not easily be checked. Sometimes, indeed, a clause was inserted in his lease expressly providing that he should not disturb

² e.g. Holkham MSS., Fulmordeston, Bdle 6: "To the Right Honourable Sir Edward Cooke, Knight, Attorney General unto the King's Mat^e. Humble sheweth unto your lordship yo^r poore and dayley orators . . . yo^r worshippes tenants of the Manor of Fulmordeston cum Croxton in the Duchie of Lancaster, and the moste parte of the tenants of the same manor that whereas your said orators in the Hillary Terme last commenced suite in the Duchie Courte against Thomas Odbert and Roger Salisbury, gent., who have enclosed their grounds contrary to the custom of the manor, wherby your wor^r loseth your shack due out of the grounds, common lane or way for passengers is stopped up, and your worshippes' poore orators lose their accustomed shack in those grounds, and the said Roger Salisbury taketh also the whole benefit of theire common from them, keepinge there his sheepe in grazinge, and debarring them of their libertie there which for comon right belongeth unto them." Compare the following defence to a charge of breaking open an enclosure. "The owners of the said tenements, from time whereof there is no memory to the contrary, have had a common of pasture for themselves and their tenants in one close commonly called 'the new leasue,' in the lordship of Weston in the manner following, that is to say, when the field where the said 'leasue' doth lie, called Radnor field, lieth fallow, then through the whole year, and when the said field is sown with corn, then from the reaping and carrying away of the corn until the same be sown again . . . and the said Thomas Dodd further said that he did break open the said close . . . being fenced in such time as he ought to have common in the same, to the end that his cattle might take their pasture therein" (*William Salt Collection, New Series*, vol. ix., Chancery Proceedings, Bdle 8, No. 9).

the neighbouring peasants³ But there are many cases in which there is no mention of formal enclosing, and in which, nevertheless, it is complained that the farmer persistently molests and harries the customary tenants. It was the essence of the open field system of agriculture—at once its strength and its weakness—that its maintenance reposed upon a common custom and tradition, not upon documentary records capable of precise construction. Its boundaries were often rather a question of the degree of conviction with which ancient inhabitants could be induced to affirm them, than visible to the mere eye of sense, and their indefiniteness made the way of the transgressor extremely easy. Even the lord of the manor sometimes found the large farmer too much for his vigilance. "John Langford and his ancestors," the College of All Souls petitioned in Chancery in 1637, "have for many yeares by vertue of several demises farmed and rented of your oratours their said messuage and lands, and used and occupied the same with their own lands, and during the time of such occupation have pulled up, destroyed and removed, the metes, mere londs, and boundaries of your oratours their said lands, and confounded the same so that the same cannot be set forth. . . . Mr. Langford's lands and grounds lying next adjoining unto the said oratours their grounds, . . . the said John Langford hath extended his said cottages, orchards, gardens, and curtilages thereunto belonging, to your oratours their said grounds, and hath made hedges, ditches, fences and mounds wherein and whereby he hath enclosed your oratours their said grounds unto his own cottages and land, . . . and intendeth so . . . to keep from your orators all the said land so encroached and enclosed."⁴ When a farmer would thus calmly expropriate the lord of the manor, it is not surprising to find constant small disputes between him and the other tenants, on the ground of his entering upon their holdings, or "surcharging the fieldes by waye of intercommon and destroying the corn of greane by drifte of cattle over the common of fieldes and suche other."⁵ Often, no doubt, the sporadic encroachments which provoked quarrels with the other tenants appeared

³ For complaints of tenants against the exactions of farmers as early as 1413, see *Victoria County History*, Essex, vol. ii. p. 318. For a stipulation in the farmer's covenant, see the following: "Item a covenant conteyned in this lease that the said Thomas shall permit and suffer the customary Tenants peaceably to have and enjoy their estates, rights, grants, interests, and premises, without any lette, interruption, or contradiction of the said Thomas" (Roxburgh Club, *Pembroke Surveys*, Knyghton), and *Northumberland County History*, vol. v p 208, Buston. "The tenants of this town at the beginning of summer have their oxen allway grazed in Shilbottel wood, or else they were not able to maintain their tenements. It is therefore requisite that his lordship or his heire should have respect unto the want of pasture, that in any lease made by his lordship or his heire to any person of the pasture, the said Shilbottel wood, there might be a proviso in the said lease that the said tenants should have their oxen ground there, as they haue been accustomed." Instances of the harrying of the peasants by the large farmers are to be found, *ibid.*, vol i p 350 (Tughall), and p. 274 (Newham).

⁴ All Souls' Archives, vol. i. p. 203, No. 356.

⁵ *Topographer and Genealogist*, vol. i., Survey of Mudford and Hinton. In this case the aggressor was not the farmer of the demesne, but a freeholder owning a third of the manor. To escape his depredations the tenants proposed "to enclose their common fieldes and to assign to Master Lyte and his tenants his third parte in every field by itself, and to extinguish his right of common in the rest."

to the great grazier a natural exercise of his obvious rights. Who should say where one man's land began and another's ended? But it can hardly be doubted that such irregularities were sometimes a deliberate attempt to worry the weaker members of the village community into throwing up their lands, by making profitable cultivation impossible. "If any man do sow any ground," ran the direction given by a lord to the shepherd who looked after the demesne farm on a Suffolk manor, "and the stifts of the field are broken, and may not duly be taken and fed as heretofore they have been used, then the said Tillot to feed off the said corn and drive his sheep on that part of the ploughed land, and to forbid any particular man to sow his ground or any part thereof whereby the sheep-walks may be hindered."⁶ Such an order points to the difficulty of adjusting the different methods of cultivation pursued by the smaller tenants and on the demesne. Though the complaints of the former were often indefinite enough, it is probable that the very difficulty of defining what a large capitalist might or might not do was in itself a substantial grievance. The truth is that it was not easy for the great pasture farm, with its flocks of sheep, to subsist side by side with the smaller arable holdings of the other tenants, without a good deal of friction arising, even in those cases in which no deliberate attempt was made to evict the latter or to deprive them of their rights of common. The traditional organisation of agriculture was based on the assumption that much the same methods of utilising the land would be followed by all the tenants. When that assumption broke down with the growth of large-scale sheep-farming, there was naturally a collision of interests between the great men who made innovations and the small men who adhered to the customary rule.

(b) *The struggle for the commons*

But sporadic encroachments are not the worst which the small man has to fear. He may wake to find the path along which he drives his beasts to pasture blocked by a hedge. When he goes to renew his lease or buy the reversion of his copy, he may be told that his holding is to be merged in a pasture farm. The great estate is not always built up by the mere consolidation of pieces of land which are already united in ownership, though spatially they may be separate. If it were there would be few statutes and few riots, for the law looks with a favourable eye on such attempts at improved cultivation, and the peasants have long been doing on a small scale what the capitalist farmer does on a large. The great estate is formed in another and less innocent way, by throwing together holdings whose possession is separate, though spatially they may be contiguous. It is the result of addition, not simply of organisation; of addition in which the cyphers are the holdings of numerous small tenants. In such a process the opposition between the interests of the peasantry

⁶ *Victoria County History, Suffolk, "Social and Economic History."*

and those of the manorial authorities is brought to a head. If one man is to run a hedge round a pasture, the pasture must first be stripped of the rights of common which enmesh it. If sheep are to be fed on the sites of ruined cottages, their occupants must first be evicted. It is over the absorption of commons and the eviction of tenants that agrarian warfare—the expression is not too modern or too strong—is waged in the sixteenth century. Let us look at both these movements more closely.

The obscurity to one age of the everyday economic arrangements of another is excellently illustrated by the difficulty of appreciating the part which common rights played in English husbandry before the nineteenth century. It is not so long since it became a memory. There are villages where the old men still remember—how could they forget it?—the year when the commons finally “went in.” Yet there is hardly a feature in the plain man’s view of the nature of a common which corresponds to the reality as it was used by our ancestors, and as it is used to-day by communities whose land system has followed a different course of development from our own. He thinks of a common as land which, like a municipal park, “belongs to the public,” land which any one may use and any one abuse. In the innocence of his heart he will even move his local authority to put in a claim for its possession, and is very much surprised when its solicitors tell him that he is fighting for the rights of two or three mouldy tenements. Again, he thinks of a common as a place of fresh air and recreation, not of business; as land for which, at the moment, no serious economic use can be found, unprofitable scraps, whose ineligibility has secured them a precarious immunity from park-loving squires and speculative builders! In connection with agriculture he thinks of it not at all—is not waste land the opposite of land which is under cultivation? In one respect he is right. Our existing commons are remnants—remnants which have survived the deluge of eighteenth century Private Acts, mainly because they consist of land too poor to pay counsel’s fees. In all other respects he is wrong. In the earlier period the word common implied common exclusiveness quite as much as common enjoyment. The value of a common to the commoners consisted precisely in the guarantee given them by custom that no one might use it except holders of tenements which time out of mind had a right thereto, and that no man might use it to a greater extent than the custom of the manor allowed. And the modern man is especially wrong in regarding commons as though they fell below the margin of economic employment. Commons and common rights, so far from being merely a luxury or a convenience, were really an integral and indispensable part of the system of agriculture, a linch pin, the removal of which brought the whole structure of village society tumbling down.

No one who reads the petitions and the legal proceedings of our period can doubt that this was what the small cultivator felt. No one who consults the surveyors can doubt that he was right. Yet, at first sight,

the importance attached to commons is certainly surprising. Is not the outcry disproportionate to the grievance? To riot and rebel when you lose grazing rights—is not this, it may be asked, rather like shooting your landlord because he will not let you keep poultry? The answer is perhaps a twofold one. The peasants' economy in the sixteenth century was one in which, in many parts of England, the pastoral side of agriculture played a very important rôle, and for which, therefore, abundance of pasture land was very essential. As any one who has lived in a Swiss châlet knows, a family which has sufficient cattle and goats on a good mountain can, during half the year, be almost self-sufficing. It has milk, butter, cheese, eggs, and meat. The only thing it really misses is bread, and that it has the means of purchasing, even if it does not, like the sensible people of Lancashire and Yorkshire, and probably of most parts of England before the industrial revolution, bake its own supplies at home or in a common public oven. Our sixteenth century peasants do not keep goats, but they keep a great many horses and cows, on some manors an average of 6 or 8 per holding; they keep a great many sheep, sometimes 150 or 200 each; they meet depressions in the corn trade by falling back on other sides of agriculture, and sending to market miscellaneous produce which, in a time of rising prices, sells well. But to do this successfully they must have plenty of grazing land. A Swiss commune measures its wealth very largely by the quality of its pasture, and will take pains to buy a good one, even though it be a long distance from the village.⁷ Can we doubt that the same was true of many parts of England, and that Hales' husbandmen who "could never be able to make up my lordes rent weare it not for a little brede of neate, shepe, swine, gesse, and hens,"⁸ were typical, not, it is true, of the more substantial men, but of many of the less well-to-do?

But there was another and more fundamental reason for the importance attached to rights of common, and for the disastrous re-action upon the tenantry involved in their curtailment. It was that the possession of pasture was not only a source of subsidiary income but also quite indispensable to the maintenance of the arable holding, which was everywhere the backbone of the tenants' livelihood. Ask a modern small holder, and he will tell you that what he wants is a certain proportion of grass-land to arable, in order that he may feed his horses without having to resort to the hire of extra land, to the purchase of foodstuffs, or to turning them out to pick up a living where they can by the side of the road.⁹ In the normal village community this was secured by the apportionment of rights of pasture to each arable holding, the tenants grazing their cattle on the common in the summer, and only feeding them on their

⁷ For an amusing example see Conway, *The Alps from End to End*, pp. 190-192.

⁸ *The Commonwealth of this Realm of England*, p. 57.

⁹ Ten acres of "turf" to forty acres of arable was the estimate of his requirements made to me by an Oxfordshire small holder.

separate closes when the approach of winter made shelter a necessity.¹⁰ It is, therefore, a mistake to think of the engrossing of commons by large farmers as affecting the peasant only in so far as he was a shepherd or a grazier. On the contrary, it struck a blow at an indispensable adjunct of his arable holding, an adjunct without which the ploughland itself was unprofitable; for to work the ploughland one must have the wherewithal to feed the plough beasts. It is this close interdependence of common rights with tillage which explains both the manner of their organisation and the distress caused by encroachments upon them. Rights of common of the most general type go with the tenement, not with the tenant, because what is considered is the maintenance of a fully equipped arable holding in the open fields, and for this end it is not necessary to allow common rights to the population of younger sons, servants, or others who do not hold one of these primary units of tillage. The commoners are often "stinted," restricted¹¹ that is in the number of beasts which they may put upon the pasture, because rights of grazing have to be distributed among all the arable holdings, such holdings being unworkable without them. Rights of common are often apportioned among the tenants "according to the magnitude of their holdings," for, of course, a large holding will need more plough beasts, and therefore more pasture, than a small one. Their boundaries are accurately recorded from this tree to that stone and such and such a hill, because otherwise an invasion of foreigners with their cattle from a neighbouring village may eat them up like locusts. To divide them up among the tenants may do no harm provided the division is an equitable one, for each man will still have his equipment of pasture, though in the form of a limited area instead of in the form of a limited quota of beasts. To appropriate common pastures without compensation may ruin a whole village; it is to seize a piece of free capital without which cows and horses cannot be fed, and thus it is virtually to confiscate the beasts, which are the peasant's tools. When that is done he must either re-assert his rights, or throw up his arable holding, or hire pasture for a money rent; sometimes—a bitter thought—he must hire grass-land from the very man who has robbed him.¹²

¹⁰ *Topographer and Genealogist*, vol. i. "The tenants of Landress have common in a certayne ground called King's Moore for all kinde of cattle, and every one of them may keep in the said moore as much of all kind of cattle in somer as their severall or ingrounde will beare in the wynter, whyche is a great relief to the poore tenants, for as they confesse they keep all their cattle there in the somer, and reserve their ingroundes untouched for the winter."

¹¹ e.g. *Southampton Court Leet Records* (Hearnshaw), pp. 4-5, 1550 "Item we present that no burgers or comyners at one time comyn above the number of two beasts upon payne of every such defaulte 2s ; provided that iff any of them have two kyne or wenlings, he shall have no horse, and yf he have but one cow he may have one horse "

¹² *Topographer and Genealogist*, vol. i.—Rolleston (Stafford) "The said manor is . . . well inhabited with divers honest men, whose trade of lyvinge is onlie by husbandry . . . and have no large pastures or severall closes . . . but have been alwaies accustomed to have their cattle and sometyme their ploughbeasts pastured in the Queen's Majestie's Park of Rolleston, for xx d , the stoge . . . without which aide and help they were neither able to maintain hospitalitie nor tyllage; and nowe of late yeares the fermor of the herbage hath advanced the stoge to 6s. 8d., and yet the Quene's Majesties rent nothing increased."

One must not, of course, unduly simplify the picture. Different villages are very differently endowed with grazing land. On some there is a common waste, and a common pasture in addition of superior quality, so that the waste can be left to animals which will thrive on rough land. On others there is not even a common waste, and the tenants have to do the best they can on the stubble which lies open after harvest. Nor do they all manage the apportionment of grazing rights in the same way. As we have seen, there has been a movement towards the formation of separate closes; and even when all the pasture is administered in common, it may either be that each villager looks after his own animals, or that the township, intent on seeing that the common is not overstocked, appoints a common shepherd and a common cowherd, who drives them all afield together "under the opening eyelids of the morn." Under all such diversities, however, which can often be paralleled from the practice of continental communes to-day, there is the fundamental fact of the necessity of rights of pasture to successful tillage. Fitzherbert's remark that "an husband cannot well thrive by his corne without he have other cattle, nor by his cattle without corne,"¹⁸ is reiterated in different forms by other surveyors. When they tell us that a common adjoining a town is a "great relief to the poor tenants," and recommend that a special clause be inserted in a farmer's lease binding him not to appropriate the pasture without which the tenants "were not able to maintain their tenements," they are speaking of matters which they understand far better than we possibly can, and must be believed.

The monopolising of commons by manorial authorities who wished to form a large sheep-run can be traced through several stages, of which actual enclosure is only one, and the climax rather than the beginning. It usually begins with the overstocking of the common pasture by the owner of great flocks and herds, and the consequent edging out of the small man, though, of course, when the area is a large one, and when, as in Wiltshire, there are great downs which are suitable for sheep, it may be a long time before the latter feels the pinch severely. But the mere overriding by a capitalist of the customary allotment of pasture rights is usually only the first step. As long as matters are left in this transition stage there is endless friction and disturbance, because each party tries to oust the other, the great man swamping the pasture with his beasts, and the peasants defiantly insisting that the recognised stint shall be observed—a guerilla warfare in which the farmer's servants are matched against the township's cowherd and the common pound. Enclosing follows as a way of regularising the new arrangements, by substituting a tangible and prickly boundary for an ideal limit. Sometimes enclosure is demanded by the peasants and resented by the well-to-do, who think that in the general squabble they will come off best. More often it is carried out with a high hand by the farmer and the lord, who, once they

¹⁸ Fitzherbert, *Book of Husbandry*.

take seriously to cattle-breeding or sheep-farming, have naturally no desire to have a limit set to their investment in stock. Occasionally compensation¹⁴ is given to the dispossessed commoners in the shape of an abatement in their rents, or of a fresh pasture in another quarter. In most of our documents, however, there is little trace of any deliberate readjustment of rights. We are simply told that "he holds the whole of the hilly pasture," or that he has "a heath enclosed with a hedge," or that grounds have been "enclosed contrary to the custom of the manor." We can trace the effect in the small number of beasts which other tenants keep, but we are left to conjecture how this state of things was reached. Our impression is that in most cases the enclosing of commons was carried out in the simplest and most arbitrary way, by the lord or the farmer erecting a hedge round such part of the common pasture as he cared to appropriate, and leaving the tenants to make good their demand that it should be removed, if they could.

Could they make it good? The question of the degree to which different classes of tenants could obtain legal redress for disturbance will be discussed later. But we cannot leave this part of our subject without considering shortly the standpoints towards disputes arising out of the loss of rights of common, which were adopted by the peasantry and by legal opinion. One may point out, in the first place, that their standpoints were by no means the same. The contrast which we have already ventured to draw between the considerable elements of practical communism in the working arrangements of the village community and the strict and (so we believe) correct interpretation of the law of the King's Courts, which treats its members simply as holders of individual rights which they on occasion exercise jointly, comes out very strikingly in the different attitudes adopted towards rights of pasture. If we must be careful not to see communism where there are really only individual rights, we must also be careful not to see only individual rights where there is in fact a considerable amount of communism. However much it may be necessary to emphasise the "rough and rude individualism"¹⁵ latent in these arrangements, we must admit that for the peasants themselves, who make and depend upon them, they contain features which are not easily explained without the use of words which the lawyers are reluctant to allow us—words implying some degree of practical communism. We must re-

¹⁴ *Northumberland County History*, vol. v., Birling "Allowed part of 25s 4d. for fogage of Orchard Medow and Mylneside Bank, because they are now enclosed within the lord's new Park, and this allowance shall be made yearly until the tenants of Byrling have and peacefully enjoy another parcel of pasture to the same value 11s 8d." (Bailiff's Accounts, 1474). R. O. *Msc Books Land Rev*, vol. ccxxx., f. 236: "Divers parcels of land and pasture of the manor of Farfield, now common of 140 acres, now occupied by the tenants there as commons and given them in exchange in satisfaction of their old common imparked in the new Park, £6, 13s 8d."

¹⁵ Pollock and Maitland, *History of English Law*, vol. i. p. 606. For the questions concerning common rights see *sibid.*, pp. 594-624, and Maitland, *Domesday Book and Beyond*, pp. 340-356; Vinogradoff, *Villainage in England*, Essay II. chap. ii., and *The Growth of the Manor*, Book II. chap. iv. I have followed Vinogradoff's rather than Maitland's view.

member that the custom of the manor is itself a kind of law, and that though the lawyers who sit in the King's Courts may cast their rules into a feudal mould, which attenuates rights of common to mere concessions made by the lord to individual tenants, yet the law of the village, the custom of the manor, to which the first appeal is made, does treat them as containing a distinctly communal element. In practice the whole body of customary tenants are found managing their commons on a co-operative plan. They regulate their use and re-adjust the regulations, sometimes at almost every meeting of the court. As a community, they hire additional pasture and administer town lands. As a community, they make arrangements for enclosure and even sell part of their common—the common in which only individuals have proprietary rights—to persons who undertake to invest capital in improving it.¹⁶ When all regulations fail and the enemy attempts to evade their vigilance by a strategic appearance of benevolence, a town sometimes returns to the charge with words glowing with what can only be called the pride of common property, though the title to that property may be of a very shadowy kind. "Whereas of late days," proclaimed the Court Leet of Southampton in 1579, "there hath been a peice of our common and heathen ditched and hedged and enclosed in and planted with willows under the name of a shadow for our cattle, which have hitherto many yeares past prospered verie well as the common was before;—wherefore (therefore)

¹⁶ For buying and selling of pasture see below. The following seems a clear case of more or less corporate action Holkham MSS., Burnham, Bdle 5, No. 94. "Copy of an indenture between [here follows a list of names] of the same town and county, yeomen, as well on the behalf of themselves as of the rest of the commoners and freeholders of the said town of the one part, and Robert Bacon of [illegible] in the County of Norfolk, and Thomas Coke of Grays Inn in the County of Middlesex of the other part, that whereas heretofore Sir Philip [illegible] being lord and owner of the marshes hereafter mentioned . . . did by his indenture of bargain and sale bearing date . . . 1588, grant bargain and sell unto [list of names as above] all those marsh grounds lying and being in Burnham, to have and to hold the said premises to the parties last before mentioned and their heirs to the use of them and their heirs for ever, to the intent and purpose notwithstanding that the said parties last before mentioned there, being inhabitants in certain ancient messuages in the said Towne, and all other inhabitants of the said Towne there and afterwards for the tyme being in any of the ancient messuages and cottages in the said towne, for so long time as they shall be there inhabitinge and noe longer, according to the quantity of their tenures within the said Towne might depasture and feede the land as by the said deeds referring thereunto being had may more fully appeare, [it recites that the land] may by wallinge and embankinge the same be improved to more than a [illegible] value, and made fitte for arable, meadowe, and pasture grounde, wherby tillage may be increased and his Majestie's subjects receive more employment thereby, and danger of drawing [drowning?] of their stock for their feedinge prevented [recites that Robert Bacon and Thomas Coke have undertaken to drain the land in return for receiving three parts of it and that the persons above mentioned] being the major parte of the parties interested in the said salte Marshes, and being enabled by the lawes and Statutes of this realm to contract and bargaine with any person or persons for the draining thereof" [now convey 3 parts of the marshes to the above-mentioned Robert Bacon and Thomas Coke], June 8, 1637. The motive of this agreement was to get the low-lying meadows on the sea-coast drained. Drainage schemes were much in the air about this time, and any one who has seen the country near Holkham and Burnham will know how badly protection from the sea was needed. Two points are worth noticing. (i.) the tenants have no objection to surrendering part of their common if they get a *quid pro quo*; (ii.) they act as a single body. They buy land and they sell land, and they can leave it to their heirs. Certain persons in the township act on their behalf, much as directors might act for a body of shareholders. Is it possible to speak of such arrangements simply in terms of individual rights? Are we not driven to think of the township as almost a landholding corporation?

we desire that it may be pulled down again and levelled as before, for we doubt that in short time yt will be taken from our common to some particular man's use, which were lamentable and pitiable and not sufferable. For as our ancestors of their great care and travail have provided that and like other many benefits for their successors, so we thinke it our dutie in conscience to keepe, uphold and maintaine the same as we found yt for our posteritie to come, without diminishing any part or parcel from yt, but rather to augment more to yt yf may be." We need not ask in what sense the Southampton men had inherited the salt marsh from their ancestors, or whether a lawyer would not have made short work of their claim to leave it to posterity. It is enough to realise that they feel it to belong to their town in a quite effective and intimate manner, that they stint it, turn off intruders, guard it for their descendants, defend it, if need be, with bows and arrows and pikes, and the other agricultural implements of that forceful age. We know that people commit many crimes in the name of posterity. But they do not usually think of bequeathing to their grandchildren rights which have never had any existence for themselves. We shall hardly understand all that was meant for a village by the loss of its common pastures unless we allow for that feeling of practical proprietorship, unless we confess that a society of landholders becomes on occasions something very like a landholding society.

But, in the second place, such communal aspirations are a matter of feeling and custom, not of national law. It is hardly necessary to point out that these words do not put an aspect of the case which could be pleaded in court in a dispute as to common of pasture. At the touch of the law, as has often been pointed out, the communal element, of which Southampton makes so much, seems to crumble away. If, to the eye of the peasants, a manor was a more or less self-conscious community with considerable powers of controlling the administration of its pastures, it was, to the eye of the common lawyer, a collection of individuals bound together by their relation to the manorial authorities, but in other respects able to enforce rights of common only in so far as those rights could be shown to be enjoyed by one of the four¹⁷ titles which the law

¹⁷ Common appendant, common appurtenant, common in gross, and common par cause de vicinage. This classification is not found in Bracton, and appears to date from the late Middle Ages, see Vinogradoff, *Villainage in England*, Essay II, chap. ii., and the following case: Coke's Reports, Part. IV., p. 60 Hill, 4 Jac. I. in *Communi Banco*: "Robert Smith brought an action of Trespass against Stephen Gatewood, gent., quare clausum fregit . . . cum quibusdam averiis . . . Defendant pleaded a certain custom, 'quod inhabitantes infra eandem villam de Stixwood predictam infra aliquod antiquum messuagium ibidem ratione commorantiae et residentiae sua in eadem habuerunt et usi fuerunt et consueverunt habere com Pastur . . . pro omnibus et omnimodis bobus et equis et aliis grossis animalibus.' Unanimously resolved that the custom is against law 1. That there are but four manners of common, common appendant, appurtenant, in gross, and by reason of vicinage, and this common *rations commorantiae* is none of them. 2. What estate shall he have, who is inhabitant, in the common, when it appears he hath no estate or interest in the house (but a mere habitation and dwelling) in respect of which he ought to have his common? For none can have interest in a common in respect of a house in which he hath no interest."

recognised. It is quite true that in practice the use of common pastures extended to persons who could not plead one of those titles, and that the economic working of the village often cannot be brought inside the four corners of a legal formula. But when a right of pasture is challenged by the lord of the manor, the tenant must show that his right falls within them or lose his case. Of those four titles residence in a manor was not one. The occupier who is the unit of English Local Government to-day had, as such, no standing, because he was not, *qua* occupier, a holder of one of the arable shares with which, primarily, rights of pasture went. Again, a great number of cottagers and day labourers, who were not holders of arable, but who in practice used the commons for pigs, geese, poultry, and cows, were likely to be legally in the same unprotected condition; so that it is obvious that, when enclosing took place, there might be a considerable number of persons, perhaps an actual majority of the villagers, who could not even raise the question whether they could obtain redress or not, and that much distress could be caused without any infringement of the law. Of those who could bring their enjoyment of rights of pasture under one of the categories which the law recognised, the freeholders were, of course, in the strongest position. They could plead rights of common appendant to their tenements; probably they could often plead common appurtenant, and common in gross, common by a special personal grant, as well, and they could enforce their rights both by self-help, in the way of throwing down recent enclosures, and by the ordinary remedies of the Assize of Novel Disseisin or an action of trespass.

Moreover, the Statute of Merton, which expressly allowed a lord to enclose commonable land on condition that he left sufficient for the free tenants, did not mean that a lord could arbitrarily cut down rights of common to what he was pleased to think sufficient. If it had, there would have been little enclosing of commons in the sixteenth century, for by that time there would have been little common left to enclose. The question "what is sufficient?" had to be answered by a jury, a jury representing expert knowledge as to local customs and the agrarian usages of the township. The jury could only answer it by taking account of the size of the tenements and of the land available for commoning. In fact, it found itself at once considering the custom of the manor, which stinted rights of pasture according to the economic needs and resources of different villages. Of the position of the customary tenants it is, for reasons which will be given below, less easy to speak. Regarded from the standpoint of the economic organisation of the manor, their rights of pasture should have got protection as much as those of the freeholders, for as holders of ancient tenements they required pasture to enable them to carry on their tillage; and since they were, in most parts of the country, by far the most numerous class, the aggregate of their commonable area was much larger than was that of the free tenants. According to the canon of interpretation

supplied by Coke,¹⁸ the Statute of Merton would appear, at any rate in the latter part of the sixteenth century, to have been construed as protecting them, and Fitzherbert,¹⁹ though he introduces an additional complication by trying—trying, it seems, quite arbitrarily—to prove that rights of pasture over the waste and rights of pasture on land which was not technically part of the waste, ought to be treated differently, places all tenants on an equal footing in respect of their claim to be left “sufficient common.”

The treatment by the law of common rights, in the case both of freeholders and of the customary tenants, seems to fit roughly into this scheme, though the actual facts are somewhat more complex than it would suggest. The cases show that the freeholders had a legal remedy if enclosure deprived them of rights of pasture, and that this remedy was used. A freeholder could say ‘these be the pastures . . . which should be my common . . . after the tenure of my freehold;’²⁰ if he proved the fact he got protection, and on manors where the freeholders were numerous and the lord wanted to make very large enclosures, he had to buy them out. It is true also that the freeholders²¹ joined with the farmer on some manors in enclosing commonable land, to the detriment of the customary tenants, who apparently sometimes had to acquiesce in it. They show again that a customary tenant could obtain protection for his rights of common pasture both, at any rate in the sixteenth century, from the Common Law Courts, and also, at an earlier date, from the Court of Chancery, provided that he could show that such rights were attached to his holding by the custom of the manor, a very important qualification, to which we must return. On the other hand, it is certainly true that both freeholders and customary tenants suffered in our period from a curtailment of common rights, in spite of the qualified protection enjoyed by the latter and the complete protection enjoyed by the former. We cannot, in fact, be content with a mere summary of the legal position, for the law is not always strong enough or elastic enough to cope with shifting economic forces. Or, rather, its arm is short, and it can only grapple with those conflicts which are sufficiently violent to force their way to Westminster.

Some light may be thrown on the kind of trouble of which our period

¹⁸ Coke, *Complete Copyholder*, Sect 53: “When an Act of Parliament altereth the service, tenure, or interest of the land, or other thing in prejudice of the lord or of the Customs of the Manor, or in prejudice of the tenant, then the generall words of such an Act of Parliament extend not to the copyhold; but when an Act is generally made for the good of the commonwealth, and no prejudice may accrue by reason of the alteration of any interest, service, tenure, or Custom, of the Manor, there usually copyhold lands are within the generall purview of such Acts.”

¹⁹ Fitzherbert, *Book of Surveying*: “And as for that manner of common, me seemeth the Lord may improve himselfe of their waste groundes, leaving their own tenants sufficient common, having no regard to the tenants of the other lordship. But as far as all erable lands, meadows, leises, and pastures, the lordes may improve themselves by course of the common law, for the statute speaketh nothing but of waste grotnds.”

²⁰ e.g. *Coventry Leet Book*, vol. ii. p. 510.

²¹ *Genealogist and Archaeologist*, vol. i., *Manor of West Coker (Somerset)*: “The demesnes remayneth in one entier ferm, and is dysmysed to one Sir John Seymour, knight, who being confederate with the freeholders of the manor, maketh such inclosers for his owne lucre, and suffreth the freeholders to do the same, nevertheless surcharge the common with their cattle, that in process of tyme yt wilbe the destrucción of the customary tenants.”

was full by two accounts which have come down to us of disputes concerning rights of common pasture. At Coventry²² there were in the fifteenth century prolonged quarrels between the City and the Prior and Convent of the Cathedral Church of St. Mary. In 1485 the Prior was accused by the city authorities of wrongfully overcharging the common with sheep and cattle, to the damage of the city. He replied by admitting the legal rights of the other commoners, but by claiming that whereas they could only pasture a limited number of beasts, "by the lawe of this lande the lord of the waste soyle may surcharge and pasture there what nombre hym lykes," and that therefore in overstocking the common he was only exercising his rights. To this the city answered by a rather hesitating appeal to custom, according to which the commoners never had been stinted to a fixed number of beasts, and by pointing out that, if the Prior was allowed to put as many beasts on the common as he pleased, he was virtually confiscating the property of the other commoners. This case brings out very clearly one weakness in the position even of the free tenants. It was that, while they were protected by law against attempts actually to deprive them of rights of common, the protection might be held to be contingent on the lord or his farmer proceeding so far as not to leave them sufficient, and was not available if the encroachments only went so far as to diminish their common pasture. There was a minimum which they could not lose: but above this minimum their rights of pasture were elastic and compressible, and when, as in this case, the pasture was so large as to make any numerical limit to the number of beasts which they might graze unnecessary, the commoners might be deprived of some part of their customary pasture without any infringement of the law.²³

Another aspect of the problem is illustrated by a story of a similar struggle at Wootton Bassett,²⁴ a small borough in Wiltshire. Early in the seventeenth century the mayor and freemen of Wootton Bassett petition Parliament to "enact something for us, that we may enjoy our right

²² *Coventry Leet Book*, vol. ii. pp. 445-446 and *passim*.

²³ If the common was so large that it had been unnecessary to "stint" it, why did the city object to the lord putting additional beasts on? I take the situation to be that the Prior—probably tempted by the profitableness of sheep-farming in the latter part of the fifteenth century—diminished the pasture which the city could use, by putting on many more beasts than ever before, which, in the absence of a recognised "stint," he was able to do without violating any custom, as he would have done if there had been a customary limit, as on many manors.

²⁴ *Topographer and Genealogist*, vol. iii. Observe what this little community endured. (i.) Sir Francis Englefield, senior, seizes 1900 out of 2000 acres of their common. (ii.) Sir Francis Englefield, junior, seizes "the charter of our town . . . and the deed of the said common. (iii.) He tries to seize the remaining 100 acres, and ruins them by lawsuits "for the space of seven or eight years at the least, and never suffers any one to come to triall in all that space . . . that the said Free tenants were not able to wage law any longer, for one John Rous . . . was thereby enforced to sell his land (to the value of £500) with following the suits in law, and many were thereby impoverished" (iv.) He turns them out of their shops in the market-place, and introduces instead "a stranger that liveth not in the town" (v.) He appoints his own nominee as mayor, in defiance of the custom which requires him to appoint one of two men submitted to him by the jury. (vi.) He prevents his victims from signing this petition by threats of eviction ("They are fearful that they shall be put forth of their bargaines, and then they shall not tell how to live, otherwise they would have set to their hands.")

again." What they want is a restoration of certain rights of common which a powerful neighbour has taken from them. Their story—they seem to rehearse it with tears in their eyes—is a perfect Odyssey of misfortunes. According to them, the manor of Wootton Bassett had passed in 1555 into the hands of Sir Francis Englefield, who enclosed a park containing 2000 acres, in which the free tenants had hitherto had rights of pasture, and had them without stint, owing to its great size. This wicked man showed them, however, a sort of contemptuous compassion. He left them 100 acres, with which they had to be content, and the rights over which they carefully apportioned, "to the Mayor for the time being two cowes feeding, and to the constable one cowe feeding, and to every inhabitant of the said Borough, each and every of them, one cowe feeding and no more, as well the poore as the riche." These rights of common were in practice vested in all the tenements in the town (not only, it would appear, the free tenements), and property was bought and sold subject to them. The occasion of the petition was that the grand nephew of the original grantee, having apparently got, by some means which the petitioners could not explain, the title deed of the common into his hands, set out to ruin those whom his ancestor had only robbed. He began lawsuits against the free tenants, excluded them from the 100 acres of common which remained to them, and put his own cattle on it. The suits, according to our story, were purposely deferred, and dragged on so long that one of the free tenants was actually made bankrupt by legal charges and the rest were impoverished, the common being used meantime by the plaintiff, Sir Francis Englefield.

These examples of struggles over rights of common pasture are instructive in several ways. In the first place, they suggest that the freeholders were regarded as having a better title than the rest of the community, and that they led the movement to resist encroachments for that reason. It is the free tenants who petition Parliament for redress, and the free tenants who are sued. If they lose their case it is not worth while, it seems, for the customary tenants to take any action. In the second place, they show that the classes who have the best legal title to right of pasture are not at all commensurate with the classes who will lose if they are taken away. Whatever the legal rights of the other tenants may be they have as much practical benefit out of the common, and as great an interest in protecting it against encroachments, as the freeholders have. When the shearing away of part of it makes it necessary to limit the number of beasts to be kept there, the limitation is applied to free and customary tenements alike without distinction, and both classes of tenements are bought and sold on the understanding that they carry with them a right of common pasture. In the third place, the case of Wootton Bassett is one of many examples of the way in which poverty, ignorance of the law, and the practical difficulties of getting justice against a powerful landlord, prevent humble litigants from enforcing their legal rights.

Finally, it reinforces what has been said above as to the economic importance of rights of pasture. The arrangements which are made at Wootton Bassett when the first assault upon the commons takes place show clearly that grazing land is thought of as a quite indispensable adjunct to every man's holding, and its loss is so disastrous to the community that they are ready to be slowly bled to death by lawyer's fees, rather than be beggared at a blow by submitting tamely without a contest.

(c) *The engrossing of holdings and displacement of tenants*

We have dwelt at some length on the loss of rights of common, because the misleading modern associations of the word seem sometimes to prevent a proper appreciation of the very important place which they occupied in the agricultural economy of our period. It must be confessed, however, that, in dealing with them first, we have reversed the order in which grievances due to enclosure were set out by the writers of the time. Though there are many bitter complaints against the enclosure of commons, it was, notwithstanding this, less the loss of rights of pasture than the consolidation of small tenancies into great farms, which aroused public excitement, at any rate, in the southern and midland counties. In the Statutes the words enclosure and depopulation are again and again combined as though they were almost synonymous; and if a contemporary had been asked to explain the special evils most characteristic of enclosing, he would certainly have given the first place to the "engrossing of farms" and "depopulation," the throwing together of peasant holdings and the eviction of their tenants. We must now examine this side of the movement. Did the displacement of tenants through the concentration of properties take place on the large scale suggested by the passionate outbursts of contemporary writers, or were their complaints as to empty villages and ruined churches mere rhetorical exaggeration? Again, what was the legal position of the classes of people who suffered? Were they entirely without the protection of the law, or did they fail to obtain legal protection principally in consequence of ignorance and intimidation?

It is easy to understand the strong motives for throwing together peasant holdings, if we keep our eyes on the picture of agricultural arrangements given in the maps. It will be seen that the different blocks of demesne land are often separated from each other by two or three strips belonging to the smaller tenantry, and that if such strips were removed they could be fitted together into a wide and unbroken expanse of territory. The manorial authorities have often, it is clear, been for a long time consolidating the demesne by exchange and purchase, so as to avoid the wastefulness of having land scattered in a hundred separate pieces, and the only obstacle to its complete unification consists of strips and patches which are held by tenants who are for one reason or another unwilling to sell, small spits and islands which stand out of the surrounding sea.

Clearly there is an enormous temptation to make the tide flow over them as well, to complete the circuit by merging them in the demesne. Look, for example, at maps Nos. III., IV., and V. Here it is evident that there has been a good deal of consolidation. Both the tenants and the lord of the manor have been forming their strips into compact blocks. To unity of ownership has been added something like spatial unity. Still the process is by no means complete. There are awkward little pieces of land which interrupt the smooth surface of the great estate, pieces which one will have to walk round, where, if the demesne is used as arable, the demesne plough must stop, where, if it is used as pasture, a fence must be erected to shut out the demesne sheep. Or walk down a typical field and mark how the land is held. Here are the strips which one would pass, if one travelled from end to end of two parallel furlongs at West Lexham²⁵ in Norfolk in the year 1575. They are copied in order from the map—

	FURLONG A			FURLONG B			
	ac	ro.	po		ac	ro.	po
1	Will Yelverton, Freeholder			1	Rob Clemente, Freeholder		
2	Demesne	.	2 1 31	2	Demesne	.	0 2 4
3	Demesne	.	0 1 7½	3	Demesne	.	1 0 3
4.	Will Yelverton, Freeholder.			4.	Demesne	.	1 0 39
5.	Demesne	.	0 2 7	5.	Demesne	.	0 1 24
6.	Demesne	.	1 3 0	6	Demesne	.	1 0 28
7.	Demesne	.	0 1 11	7	Demesne	.	0 1 22
8.	Demesne	.	0 2 10	8	Demesne	.	1 2 19
9.	Demesne	.	0 2 28	9	Will Lee, Freeholder.		
10.	Glebe.			10	Will Gell, Copieholder.		
11.	Demesne	.	1 2 12	11.	Demesne	.	1 1 39
12.	Demesne	.	3 0 0	12	Demesne	.	2 3 39
13.	Glebe			13	Demesne	.	2 1 25

These furlongs, though the predominance of demesne land in them makes them not quite typical, illustrate sufficiently the awkward way in which the great farmer's stretch of land is interrupted by the little property of a freeholder or copyholder. The strips of Will Yelverton, Robert Clement, Will Lee, and Will Gell must have been a constant eyesore to the manorial authorities. Buy them out or evict them, and then the two furlongs will consist of nothing but demesne land and glebe. They will be two fields of quite a modern pattern and quite ready for enclosure. Leave these tenants where they are, and they are a permanent obstacle to unified management, all the more annoying because they are so petty. They may even insist on the farmer observing the same course of cultivation as themselves, and on turning their beasts to common on his land after harvest! Is it not inevitable that, as soon as the lord is pushed by economic forces into making his estate yield the maximum money return irrespective of a numerous tenantry or of the ancient methods of tillage, he should try in any way he can to get rid of what to him are troublesome excrescences, that he should begin questioning titles, screwing up rents, turning copyhold to leasehold?

²⁵ Holkham MSS., Map of West Lexham.

If our hypothesis is correct we ought to be able to find manors where the strips formerly held by tenants have been merged in the demesne, so as to form a continuous expanse, in the hands of the lord or his farmer, out of what was formerly a collection of fragments of separate holdings. To see it verified, let us turn to another manor in the same county, that of Walsingham,²⁶ which was surveyed in the reign of Henry VIII. Here is a statement of the land which is "in the hands of the lord" in the west field—

IN THE WEST FELDE

1.	In manus domine [sic]	$\frac{1}{2}$ acre of land of the tenement Marre
2.	" "	$1\frac{1}{2}$ roods of the tenement Furell
3	" "	$\frac{1}{2}$ acre land of the tenement Stanx
4	" "	1 acre, 1 rood land of the tenement Gryne
5	" "	3 roods land of the tenement Scot
6	" "	$3\frac{1}{2}$ roods of the tenement Townsend.
7.	" "	$\frac{1}{2}$ acre land of the tenement Byelaugh
8.	" "	$\frac{1}{2}$ acre land of the tenement Wheteloffe.
9	" "	$\frac{1}{2}$ acre land of the tenement Scutt
10.	" "	$\frac{1}{2}$ acre land of the tenement Coyefor
11	" "	1 acre with the gravel pit.
12	" "	3 roods land of the tenement Nedwyn
13	" "	1 acre land late of J Cockerell
14	" "	3 roods land of the tenement Gilbert
15	" "	1 acre and 1 rood of the tenement Spotell
16	" "	3 roods land of the tenement Spotell.
17.	" "	3 roods land of the tenement Husbond
18	" "	1 acre of the tenement Rodengh
19	" "	$\frac{1}{2}$ acre land of the tenement Pymans.
20	" "	3 roods of the tenement Scutt.
21	" "	1 acre of decay of the tenement Spotell

Here one has a field divided into twenty-one strips. Of these strips eighteen had at one time been in the occupation of separate individuals. The picture is just what we are accustomed to in mediæval surveys. But some time before this survey of Walsingham was made a great change had taken place. The separate fragments had been taken out of the hands of the tenants and combined in the hands of the lord; the field is ready for conversion to pasture and for enclosure. How extremely profitable it might be to substitute a single large farm for a number of small holdings is proved by Manorial Rentals. Taking five manors in Wiltshire in the year 1568, one finds that the rents paid by the farmer of the demesne work out at 1s 6d., $7\frac{3}{4}$ d., 1s. $5\frac{3}{4}$ d., 1s. $1\frac{3}{4}$ d., 1s. $5\frac{1}{2}$ d. per acre; those paid by the customary tenants at $7\frac{1}{2}$ d., 5d., 1s. $0\frac{3}{4}$ d., $5\frac{3}{4}$ d., $5\frac{1}{4}$ d. per acre.²⁷

The difference is, in itself, enough to explain a decided movement towards an increase in the size of the unit of agriculture. But of course a powerful incentive to such procedure was supplied by the growth of pasture farming. In the days when the cultivation of the demesne depended on the labour of the tenants there was obviously bound to be a certain proportion between the land belonging to the former and the land held by the latter, a proportion which might be expressed by saying "no

²⁶ R. O. *Aug. Off. Misc. Bks.*, vol cccxcix, f. 201 ff.

²⁷ The manors are South Newton, Winterbourne Bassett, Knyghton, Donnington, and Estovertown and Phipheld (Roxburgh Club, *Surveys of Pembrokeshire Manors*)

tenants, no demesne cultivation; no demesne cultivation, no income for the lord." But when tillage was replaced by pasture farming this economic rule of three ceased to work. On the one hand, the limit of size imposed on the demesne farm by considerations of management was removed or at any rate enormously extended, for many thousand sheep could be fed by two or three shepherds. On the other hand, the economic motive for preventing a decline in the number of small landholders was weakened, because there was little use for their labour on a pasture farm, while there was a great deal of use for their land, if only it could be cleared of existing rights and added to it. We have, in fact, an ordinary case of the depreciation of particular²⁸ kinds of human labour in comparison with capital, of the kind to which the modern world has become accustomed in the case of machinery—become accustomed and become callous.

We shall perhaps best give precision to our ideas of the sort of policy which landlords were inclined to adopt, by taking a single concrete instance, though of course conditions varied locally very much from place to place. It comes from Hartley²⁹ in Northumberland, where Robert Delavale was lord of the manor in the reign of Elizabeth. The narrator is his cousin, Joshua Delavale—

"Since which time" (*i.e.* 16 Eliz.), he says, "the said Robert Delavale purchased all the freeholder's lands and tenements, displaced the said tenants, defaced their tenements, converted their tillage to pasture, being 720 acres of arable ground or thereabouts and made one demaine, whereon there is but three plows now kept by hinds and servants, besides the 720 acres. So that where there was then in Hartley 15 serviceable men furnished with sufficient horse and furniture, there is now not any, nor hath been these 20 years last past or thereabouts."

Here we get a complete example of the various steps which are taken to build up a great pasture farm. The freeholders are bought out; the other tenants are (it is to be inferred) evicted summarily; their houses are pulled down; their land is thrown into the demesne; the whole area is let down to pasture and managed by hired labourers, while the landholding population is turned adrift. It is worth noticing that the word "enclosing" is not used. All the drastic changes that are usually ascribed to enclosure can on occasion take place without it. Indeed, the more

* 28 This, of course, is not inconsistent with a general appreciation, *i.e.* a general rise in wages and fall in the rate of interest

29 *Northumberland County History*, vol. ix. p. 124. For a similar case of evictions by Delavale, showing how they were carried out, *ibid.*, pp. 201-202. "There was in Seaton Delavale township 12 tenements, whereon there dwelt 12 able men sufficiently furnished with horse and furniture to serve his Majestie . . . who paid 4*s* 8*d*. rent yearlie a piece or thereabouts. All the said tenants and their successors saving 5 the said Robert Delavale either thrust out of their fermholds or weried them by taking excessive fines, increasing of their rents unto £3 a piece, and withdrawing part of their best land and meadow from their tenements . . . by taking their good land from them and compelling them to winne moorishe and heathie ground, and after their hedging heth ground to their great charge, and paying a great fine, and bestowing great reparation on building their tenements, he quite thrust them off in one yeare, refusing either to repay the fine or to repay the charge bestowed in diking or building . . . The said seven fermholds displaced had to every one of them 60 acres of arable land, viz 20 in every field at the least as the tenants affirme, which amounteth to 480 acres of land yearlie or thereabouts, converted for the most part from tillage to pasture, and united to the demaine of the lordship of Seaton Delavale."

drastic they are the less need is there to complete them by the erection of fences, for the smaller the population left to commit encroachments.

If such a process were general or even common, we should certainly have the materials of a social revolution. But was it? The much discussed question of the effect of the agrarian changes on the numbers of the rural population is one which it is not possible to answer with any approach to accuracy, owing to the difficulty of obtaining a sufficient number of continuous series of surveys and rentals. Those relating to single years tell mainly results, when what we want to see is a process. Nevertheless even single surveys are not altogether without value. They show the distribution of land between different classes at a given moment, and sometimes contain indications of the changes by which the existing distribution was reached. In particular they show us the relative areas of the demesne farm and of the land in the hands of all other classes of tenants. And this has a certain interest. For since the demesne farm on a manor where conditions approximated most closely to those of the Middle Ages and had been least affected by more recent changes, rarely contained more than half the whole manorial territory and generally not so much, there is a *prima facie* case for surmising concentration of holdings and evictions when one finds two-thirds, three-quarters, or even ninety per cent. of it in the hands of one large farmer. It is, however, a very tedious task calculating the acreage held by a number of different tenants, and this may perhaps excuse the small number of instances which are given below. They are as follows.—

TABLE VI

Manor	(I) Whole Area Ascertain- able ³⁰	(II) Area held by Farmers of Demesnes	Percentage of (II) to (I)
Donnyngton	1523½	418	27 8
Salford	856	295	34 4
Estoverton and Phipheld	1160	484¾	41 0
Weodon Weston	715	301	42 0
South Newton	1365	632	46 3
Washerne	1249	707 (in hands of lord)	56 6
Knyghton	452	268	59 2
Bishopeston	1280	805	62 9
Gamlingay Merton	283½	199¾	70 3
Winterbourne Bassett	708½	532	75 1
Billingford	666	507	76 1
Gamlingay Avenells ³¹	531¾	420¼	79 0
Domerham ³²	960½	824½	85 8
Ewerne	473	428	90 5
Burdonsball	190	190	100 0
Whadborough	469	469	100 0

³⁰ In several cases the freeholders' lands are not stated in the survey, and are therefore not included in this table.

³¹ A few acres described as "held without title" are omitted.

³² I am not sure that there are not other lands in Domerham not included in the survey or in the demesne. If this is so, the proportion of the latter to the rest of the manorial land would of course be reduced.

It will be seen that on eight of these sixteen manors more than two-thirds of the whole area, and on seven more than three-quarters, is in the hands of one individual, the farmer of the demesnes. These figures are at any rate not inconsistent with a considerable consolidation of tenancies and displacement of tenants, though we cannot say that they prove it.

Occasionally the surveys take us behind this presumptive evidence and enable us to trace the building up of large farms out of small holdings. For example, at Ormesby,³³ in 1516, the lord of the manor held 219 acres "late in farm" of six tenants. At Domerham,³⁴ some time before 1568, enclosure of land in the open fields and conversion of arable to pasture had been carried out by the largest of the three farmers. The process had been accompanied by depopulation; for in 1568 his farm included pieces of land which had formerly belonged to four smaller tenants, and the two large farms which he held had formerly been in separate hands. It is probable that at Winterbourne Bassett³⁵ somewhat the same movement had taken place. In 1436 two carucates of land were held by an unspecified number of tenants, in 1568 three customary tenants are still found there, but three-quarters of the manor is in the hands of a single farmer who has recently enclosed a field of 40 acres. Elsewhere one can fill in the picture in somewhat greater detail. At Tughall,³⁶ in Northumberland, the surveyor tells us in 1567, the demesne lands had been let to a farmer, who acted as the lord's bailiff and collected the rents and services of the other tenants. He used his position to partition the manor so as to get rid of the intermingled holdings, and at the same time so harassed the smaller tenants that they were reduced from twenty-three to eight. At Cowpen³⁷ a similar concentration of land was going on at the end of the sixteenth century; first five tenancies were thrown into one, and then the whole manor passed into the hands of one large farmer. At Newham,³⁸ near Alnwick, we are told that a hundred and forty men, women, and children were evicted simultaneously. At Seaton³⁹ Delavale, the Robert Delavale who had depopulated Hartley, turned adrift seven families out of twelve. The map of a Leicestershire manor is more eloquent than many lamentations. In "the place where the town of Whadborouge once stood" there was by 1620 not a single tenant left. The whole of it formed one great expanse of pasture.

But these isolated instances are obviously worthless as a basis for generalisation. The most that can be said of them is that they prove that the writers who spoke of whole towns being depopulated were not

³³ R. O. Rentals and Surveys, Gen. Ser., Portf 22, No. 18.

³⁴ Roxburgh Club, *Surveys of Pembrokeshire Manors*

³⁵ *Ibid.*, and Hoare, *History of Wiltshire*, Hundred of Ambresbury.

³⁶ *Northumberland County History*, vol. i. p. 350.

³⁷ *Ibid.*, vol. ix, Cowpen.

³⁸ *Ibid.*, vol. i p. 275.

³⁹ *Ibid.*, vol. ix. pp. 201-202

romancing. Nor are the statistics offered by contemporaries of any practical help towards determining the social effects of enclosure. Those who state, like Moore⁴⁰ (writing in the seventeenth century), that they have seen "in some townes fourteen, sixteen, and twenty tenants discharged of plowing," or, like the Dean of Durham,⁴¹ that "500 ploughs have decayed in a few years" and "of 8000 acres lately in tillage now not 8 score are tilled," may have seen what they say. But these figures are suspiciously round, and the cases are obviously extreme ones, not samples. The one⁴² writer who makes an estimate for the whole country, putting the number of persons of all ages displaced between 1485 and 1550 at 300,000, is rash enough to explain how his estimate was reached, and his explanation shows that it was not even a plausible guess.

The returns collected for the Government seem at first to take us on to surer ground. Investigations were made by Royal Commissioners⁴³ in the years 1517-1519, 1548, 1566, 1607, 1632, 1635, and 1636. The returns collected for twenty-three counties by the Commission of 1517, for four counties by those of 1548-1566, and for six counties by that of 1607 have been printed. According to them, it would appear that between 1485 and 1517 about one-half per cent. of the total area of the counties investigated was enclosed, and 6931 persons displaced, the corresponding figures for the period 1578-1607 being 69,758 acres and 2232 evictions. Both in the earlier, and in the later, period, the county which was affected most severely was Northamptonshire, where 2.21 per cent. of the county was returned as enclosed in the years 1485-1517, and in the years 1578-1607 4 30 per cent., the numbers displaced being respectively 1405 and 1444. If we like, we may adopt the conjectural estimates of Professor Gay, and, assuming that the pace of the movement was the same during the years for which we have not information as during those for which we have, may say with him that from 1455 to 1607 the agrarian changes affected about 2.76 of the whole area of twenty-four counties, and displaced something between 30,000 and 50,000 persons.

The statistics which have been worked up by Mr. Leadam and Professor Gay from the inquiries of the Government are extremely valuable as showing the geographical distribution of the enclosing movement.

⁴⁰ Moore, *The Cryng Sin of England*, &c.

⁴¹ Cal. S. P. D. Eliz., 1595-1597 (p. 347), quoted Gay, *Quarterly Journal of Economics*, vol. xvii.

⁴² "Certayne Causes gathered together wherein is shewed the decaye of England only by the great multitude of shepe" (E. E. T. S. date 1550-1553) "It is to understande . . . that there is in England townes and villages to the number of fifty thousand and upward, and for every town and village . . . there is one plough decayed since the fyrist year of the reign of King Henry VII. . . . The whiche 50,000 ploughs every plough was able to maintain 6 persons, and nowe they have nothing, but goeth about in England from dore to dore."

⁴³ For a discussion of the value of these reports see Leadam, *Domesday of Enclosures*, and *Trans. Royal Hist. Soc.*, New Series, vol. vi; Gay, *Trans. Royal Hist. Soc.*, New Series, vol. xiv. and vol. xviii., Gay, *Quarterly Journal of Economics*, vol. xvii. (1902-1903). A useful summary of the evidence, with a map illustrating the probable geographical distribution of the movement, is given by Johnson, *The Disappearance of the Small Landowner*, pp. 42-54 and Map I.

It is most powerful in the Midland counties, which were in the sixteenth century the chief granary of the country, and its influence is least in the South-West and South-East. In Somersetshire, Devonshire, and Cornwall, Suffolk, Essex and Kent the small enclosures⁴⁴ had probably often been carried out by the peasants themselves at an early date, with the result that those districts were, compared with the open field villages of the Midlands, little disturbed. Those parts of the country, in fact, where the peasantry have been most progressive, are relatively unaffected by the changes of our period. They have been inoculated and they are almost immune. On the other hand, one is inclined to say that the figures are not of much value for other purposes. In the nature of things they cannot be reliable, and, if they were reliable, they would not really answer the most important questions which are asked about the social results of the changes to which they refer. Let us remember the methods by which they were collected. They are taken from returns which are in the form of answers delivered to commissioners by juries of peasants, juries which we know from the most active of the commissioners to have been occasionally packed by the local proprietors, and often intimidated,⁴⁵ and to have been examined by the commissioners under the eyes of their landlords. It is hardly necessary to point out that no evidence of even approximate accuracy would be derived from an inquiry conducted in such a fashion at the present day. Is it probable that it was obtained any more satisfactorily in the sixteenth century?

Nor, if accurate, could these statistics really be used as a means of disproving the accounts given by contemporary writers of the dislocation produced by enclosure. That those accounts were highly coloured, no one familiar with the methods which the age brought to the discussion of economic questions will doubt. Professor Gay does well to warn us against credulity. It is certainly a salutary discipline to turn from the burning words of Latimer or Crowley to these official calculations, and then, by a glance at the chapters of Dr Slater and Professor Gonner on the enclosures of the eighteenth century, to realise that even in those

⁴⁴ It is a question how far there had ever been an open field system in some of these counties, e.g. Cornwall and Kent. There certainly were some open field villages of the ordinary pattern in Kent (see Slater, *The English Peasantry and the Enclosure of Common Fields*, p. 230). But Kent from an early date develops on its own lines, and does not go through the same stages of manorialism and commutation as other counties. Much of it seems to start at the point which they reach only in the sixteenth century. Cornwall again, though in the sixteenth century there were commons where the villagers pastured their cattle together (see accounts of Landress and Porpehan, *Topographer and Genealogist*, vol. 1.), was largely a county of scattered homesteads and very early enclosure (for the "nucleated village" and "scattered homesteads," see Maitland, *Domesday Book and Beyond*, pp. 15-16), pointing to a different system of settlement from that of the counties where the open field system obtained. For enclosures in Devon and Somerset see Cunningham, *Growth of English Industry and Commerce, Modern Times, Part II*, App. B: "A consideration of the cause in question before the lords touchinge depopulation," and Carlyle's *Cromwell*, Letter XXIV. "Lest we should engage our body of horse too far into that enclosed country."

⁴⁵ For intimidation see the case of Wootton Bassett, quoted above, pp. 197-199. Also Gay, *Trans. Royal Hist. Soc.*, New Series, vol. xviii.; and Hales' defence (appendix to Miss Lamond's introduction to *The Commonwealth of this Realm of England*).

parts of England where the cry against depopulation had arisen most bitterly two centuries before, there were still thousands of acres to be enclosed by some hundreds of Enclosure Acts. But if we must discount the protests of authors to whom all large economic changes seem to smell of the pit, we must not forget either that their views are formed by the conditions of their age, and that it is just in the conditions productive of this state of mind that even a moderate change is likely to work with the most disastrous effects. We who reckon in millions and count a year lost which does not see some new outburst of economic energy, must be very careful how we apply our statistics to measure the movements of an age where economic life differs not only in quantity but in quality, where most men have never seen more than a hundred separate individuals in the course of their whole lives, where most households live by tilling their great-grandfathers' fields with their great-grandfathers' plough. We must not be too clever—our ancestors would have said too wicked—for our subject. We must not accept an estimate of the amount of depopulation as an explanation of its effects; for the two things are not in *pari materia*. Certainly we must not argue that, because the returns collected by Royal Commissions show that in the counties affected most severely less than one-twentieth of the total area was enclosed, therefore the complaints of observers must be taken as a hysterical exaggeration of slow and unimportant changes. For one thing, summary tables are no measure of the distress caused by eviction, till we know how the tables are made up. The drifting away of one tenant from each of fifty manors, and the eviction of fifty tenants from one manor, yield precisely the same statistical results when the total displacement from a given county is being calculated. But the former would be scarcely noticeable, the latter might ruin a village. For another thing, the total area of a county is a mere spatial expression, which is important to no one except geographers. What mattered to the peasantry, and what matters to us, is not the proportion which the land enclosed bore to the whole area of the county, but the proportion which it bore to the whole area available for cultivation. This, which is of course not ascertainable, is clearly a very different thing.⁴⁶ It is no consolation to a family which has been evicted from a prosperous farm to be told that it can settle on a moor or a marsh, on Blackstone Edge or Deeping Fen. To argue that enclosing was of little consequence, because so small a proportion of the total land area was enclosed, is almost precisely similar to arguing that overcrowding is of little consequence, because the area of Great Britain divided by the population gives a quotient of about one and a half acres to every human being in the country. The evidence of a general trend of opinion during a century and a half—opinion by no means confined to the peasants, or to the peasants' champions like Hales, or to idealists like Sir Thomas More,

⁴⁶ Professor Pollard has good remarks on this point (*Political History of England*, 1547-1603, p 29).

or to the preachers of social righteousness like Latimer and Crowley, but shared by Wolsey and Thomas Cromwell in the earlier part of the century, Robert Cecil and Francis Bacon⁴⁷ at the end of it—to the effect that the agrarian changes caused extensive depopulation, is really a firmer basis for judging their effects than are statistics which, however carefully worked up, are necessarily unreliable, and which, when reliable, are not quite the statistics required. When that opinion is backed by documentary proof that from one village thirty persons, from another fifty, from another the whole population, were displaced, though of course we cannot say that such displacement was general, we can say that it was not unknown, and that if contemporaries were guilty of exaggeration (as they probably were), their exaggeration took the form not of inventing extreme cases, but of suggesting that such extreme cases were the rule. On the whole, therefore, our conclusions as to the quantitative measurement of depopulation caused in the sixteenth century must still, in spite of the researches of Mr. Leadam and Professor Gay, be a negative one. In the first place, we cannot say, even approximately, what proportion of the total landholding population was displaced. In the second place, such figures as we do possess are not of a kind to outweigh the direct evidence of contemporary observers that the movement was so extensive as in parts of England to cause serious suffering and disturbance.

(d) The agrarian changes and the Poor Law

The obscurity in which the statistics of depopulation are involved does not prevent us from seeing that it played an important part in providing an incentive to the organisation of relief on a national and secular basis, which was the most enduring achievement of the social legislation of sixteenth century statesmen. An influential theory of Poor Law History regards the admission finally made in 1601 that the destitute person has, not only a moral, but a legal, right to maintenance, as a last fatal legacy handed to the modern state by the expiring social order of the Middle Ages, a relic of villeinage which was given a statutory basis at the very moment when a little more patience would have shown that a national system of poor relief was not only unnecessary, but positively harmful, in the new mobile society which the expansion of commerce and industry was bringing into existence. "Serfdom," says an eminent exponent of this view, "is itself a system of Poor Law. The Poor Law is not therefore a new device invented in the time of Elizabeth to meet a new disease. The very conception of a society based on status involves the conception of a Poor Law far more searching and rigid than the celebrated 43 Eliz. cap. 2. . . . The collective provision is appropriate to the then

⁴⁷ Wolsey was responsible for the Commission of 1517. For a letter of Cromwell to Henry VIII. on the subject of enclosure, and for the views of Cecil and Bacon, see below, pp 214-215, 218.

expiring condition of status. . . . A wide diffusion of private property, not collective property, is the obvious and natural method by which the unable-bodied periods of life are to be met. With the disappearance of Feudalism we might have expected that there would have disappeared the custom which made the poor a charge upon the manor or parish of which they had formerly been serfs. This, however, did not happen, and a history of this survival of mediæval custom is the history of the English Poor Law. . . . To sum the matter up—In following the development of Poor Law legislation, we watch society struggling to free itself from the fetters of a primitive communism of poverty and subjection, a state of things possessing many ‘plausible advantages.’ Legislation for the management of the Poor often impeded, and only occasionally expedited, this beneficent process. . . . It proceeded from ignorance of the true nature of progress, and from a denial or neglect of the power of absorption possessed by a free society.”⁴⁸ It is obvious that in this passage Mr. Mackay uses his interpretation of Poor Law origins to make a very trenchant criticism upon the whole principle involved in the public maintenance of the destitute. That principle was not introduced because new conditions made its adoption indispensable. It survived from an older order of things into a world in which the only serious causes of destitution are personal and not economic, and in which therefore it is quite inappropriate. To tolerate it is to drag for ever a clanking chain, one end of which is fastened round the bleeding ankles of modern society, and the other anchored in the hideous provisions of the Statute of Labourers. Nor should we be wrong if we said that a similar theory, though less lucidly expressed, has had a considerable influence upon Poor Law practice. For the idea of a Poor Law as an anachronism which is quite out of place in a developed economic society is implied more than once in the celebrated report drafted by Senior and Chadwick in 1834, and has passed from that brilliant piece of special pleading into the minds of three generations of administrators. “A person,” they state, “who attributes pauperism to the inability to procure employment, will doubt the efficiency of the cause which we propose to remove it,” whereas “whenever inquiries have been made as to the previous condition of the able-bodied individuals who live in such numbers on the town parishes, it has been found that the pauperism of the greater number has originated in indolence, improvidence, and vice, and might have been avoided by ordinary care and industry. The majority of the Statutes connected with the administration of public relief have created new evils, and aggravated those which they were intended to prevent.”⁴⁹

A discussion of Poor Law theory and history falls outside the limits of this essay. But in forming an estimate of the effects of the agrarian changes which have been described above, it is perhaps not out of place

⁴⁸ Mackay, *History of the English Poor Law*, 1834-1898, pp. 10-11, 16-17.

⁴⁹ *Poor Law Commission Report of 1834*, pp. 264-277, 281.

to consider the minor question of the connection between them and the system of Poor Relief which took its final shape in the reign of Elizabeth. Since the distress which the relief institutions of an age exist to meet stands to its general economic conditions in the relation of reverse to obverse, of effect to cause, of disease to environment, much light is thrown on the economic difficulties most characteristic of any period by ascertaining the type of distress with which relieving authorities are most generally confronted. Equally important, any student of Poor Law History, who is not the partisan of a theory, finds himself constantly driven to look for an explanation of Poor Law developments in regions which, at first sight, appear to lie far outside his immediate subject, but where, in reality, is grown the grim harvest which it is the duty of Poor Law authorities, often acting in complete ignorance of its origin, to reap. Much wild theorising and some tragic practical blunders might have been avoided, had it been more generally realised that, of all branches of administration, the treatment of persons in distress is that which can least bear to be left to the exclusive attention of Poor Law specialists, because it, most of all matters, depends for its success on being carefully adapted to the changing economic conditions, the organisation or disorganisation of industry, the stability or instability of trade, the diffusion or concentration of property, by which the nature and extent of the distress requiring treatment are determined.

When one turns to the age in which the Poor Law took shape, the first thing to strike one is that the need for it arises, according to the views expressed by most writers of the period, from that very development in commercial relationships, that very increase in economic mobility, which Mr. Mackay seems to imply should have made it unnecessary. The special feature of sixteenth century pauperism is written large over all the documents of the period—in Statutes, in Privy Council proceedings, in the records of Quarter Sessions. The new and terrible problem is the increase in vagrancy. The sixteenth century lives in terror of the tramp. He is denounced by moralists, analysed into species by the curious or scientific, scourged and buffeted by all men. The destitution of the aged and impotent, of fatherless children and widows, is familiar enough. It has been with the world from time immemorial. It has been for centuries the object of voluntary charitable effort, and when the dissolution of the monasteries dries up one great channel of provision, the Government intervenes with special arrangements⁵⁰ to take their place a whole generation before it can be brought to admit that there is any problem of the unemployed, other than the problem of the sturdy rogue. The distinction between the able-bodied unemployed and the impotent is one which is visible to the eye of sense. The distinction between the

⁵⁰ 27 Hen. VIII., c. 25. Under this Act city and county authorities are to relieve impotent beggars "by way of voluntary and charitable alms." They are also for the first time given power to apprentice vagrant children.

man who is unemployed because he cannot get work and the man who is unemployed because he does not want work, requires a modicum of knowledge and reflection which even at the present day is not always forthcoming. The former distinction, therefore, is not supplemented by the latter until the beginning of the last quarter of the century.⁵¹ In one respect, that of the Law of Settlement, the English Poor Law does show traces of a mediæval origin. In all other respects, so far from being a survival from the Middle Ages, it comes into existence just at the time when mediæval economic conditions are disappearing. It is not accepted at once as a matter of course that the destitute shall be publicly relieved, still less that the able-bodied destitute deserve anything but punishment. Governments make desperate efforts for about one hundred years to evade their new obligations. They whip and brand and bore ears; they offer the vagrant as a slave to the man who seizes him; they appeal to charity, they introduce the parish clergy to put pressure on the uncharitable; they direct the bishops to reason with those who stop their ears against the parish clergy. When merely repressive measures and voluntary effort are finally discredited, they levy a compulsory charge rather as a fine for contumacy than as a rate, and slide reluctantly into obligatory assessments⁵² only when all else has failed. And if we ask why the obligation of maintaining the destitute should have received national recognition first in the sixteenth century, we can only answer by pointing to that trend away from the stationary conditions of agriculture to the fluctuating conditions of trade, and in particular to that displacement of the rural population, which we have already seen was one result of enclosure. The national Poor Law is not a mediæval anachronism. It is the outcome of conditions which seem to the men of the sixteenth century new and appalling. Of these conditions the most important are the agrarian changes.

Let us try for a moment to put ourselves in the position of a family which has been evicted from its holding to make room for sheep. When the last stick of furniture has been tumbled out by the bailiff, where, poor houseless wretches, are they to turn? They cannot get work in their old home, even if they can get lodgings, for the attraction of sheep-farming is that the wage bill is so low. Will they emigrate from England like the Scotch crofters? There are people who in the seventeenth century will advise them to seek a haven with the godly folk who have crossed the Atlantic, who will argue that England is overstocked, that "there is such pressing and oppressing in town and country about farms, trades, traffic, so as a man can hardly anywhere set up a trade but he shall pull-down two of his neighbours," and point out that "the country is re-

⁵¹ 18 Eliz. c. 3 directed that a stock of wool, flax, hemp, iron, or other stuff should be provided in cities, corporate towns, and market towns. The important words which show the change of opinion are, "To the intente also that . . . Roges . . . may not have any just excuse in saying they cannot get any service or work."

⁵² 14 Eliz. c. 5.

plenished with new farmers, and the almhouses are filled with old labourers," that "the rent-taker lives on sweet morsels, but the rent-payer eats a dry crust often with watery eyes."⁵³ But enclosures have been going on for a century before the plantations exist to offer a refuge, and in any case the probability of the country folk hearing of them is very remote. Can a man migrate to seek work in another part of the country? Not easily, for, apart from the enormous practical difficulties, the law puts obstacles in his way, and the law is backed up with enthusiasm by every parish and town in the country. There are three possible attitudes which a State may adopt towards the questions arising from the ebb and flow of population. It may argue, with the optimists of 1834, that the mobility of labour is a good thing, a symptom of alertness and energy, and that it will take place of itself to the extent which is economically desirable, provided that no impediments are placed in the way of those who desire to better themselves by looking for work elsewhere. Or, while believing that it is much to be desired that people should migrate freely from place to place in search of employment, it may nevertheless reflect that the mere absence of restrictions does not in fact stimulate such movement, and therefore take upon itself its encouragement through the publication of information and the registration of unemployed workers. Or, subordinating economic to political considerations, it may hold that the movement of a large number of unemployed persons up and down the country is not an indication of a praiseworthy spirit of enterprise, but a menace to public order which must be sternly repressed. We need hardly say that this last view is the one characteristic of the sixteenth century. The attitude towards the man on tramp in search of employment is exactly the opposite of that which is held at the present day. He is not less, but much more, culpable than he who remains in his own parish and lives on his neighbours. He is assumed not to be seeking work but to be avoiding it, and avoiding it in a restless and disorderly manner. Hear what the worthy Harrison says when the State has already made the provision for the unemployed a charge upon each parish:—"But if they refuse to be supported by this benefit of the law, and will rather endeavour by going to and fro to maintain their idle trades, then are they adjudged to be parcel of the third sort (*i.e.* wilful vagrants), and so, instead of courteous refreshing at home, are often corrected by sharp executions and whip of justice abroad. Many there are which, notwithstanding the rigour of the laws provided on that behalf, yield rather with this liberty (as they call it) to be daily under the fear and terror of the whip, than by abiding where they were born or bred, to be provided for by the devotion of the parishes."⁵⁴ The village is still thought of as the unit of employment. It is still regarded

⁵³ Robert Cushman, "Reasons and Considerations touching the Lawfulness of Removing out of England into the parts of America" (printed by E. Arber, *The Story of the Pilgrim Fathers*).

⁵⁴ Harrison in *Elizabethan England* (Withington), chap. x.

as being equipped with the means of finding work for all its inhabitants, as though there had been no movement towards pasture-farming to prick a hole in its economic self-sufficiency. The presumption, therefore, is against the man who leaves the parish where he is known to his neighbours. He must prove that he is going to take up work for which he is already engaged. He must get a licence from his last employer. As far as the able-bodied are concerned the Poor Law is in origin a measure of social police. Relief is thrown in as a makeweight, because by the end of the sixteenth century our statesmen have discovered that when economic pressure reaches a certain point they cannot control men without it. The whip has no terrors for the man who must look for work or starve. So every Sunday after church, while Parson's sermon is still fresh in our minds, we board out our poor by rotation "among such householders as will maintain them meat and work and such wages as they shall deserve for the week following."⁵⁵ Heaven help us if the next parish does not do the same!

And the Poor Law is a police measure for the necessity of which the agrarian changes are largely responsible. In spite of all the obstacles in the way of migration, in spite of whip and courteous refreshment, men do in fact migrate, and not only men, but women and children. By the latter part of the century, at any rate, statesmen have begun to understand that pauperism and vagrancy stand to the depopulation caused by enclosure in the relation of effect to cause. The revolution in the official attitude to the problem caused by this belated illumination is as great as that which has taken place in the last ten years with regard to unemployment. Once the new standpoint has been seized, though opinion, and the opinion not only of the ruling classes, but of burgesses and villagers, still treats the vagrant with iron severity, it never quite relapses into the comfortable doctrine, the grand discovery of a commercial age, that distress is itself a proof of the demerits of its victim, and that Heaven, like a Utilitarian philosopher, permits the existence of destitution only that it may make "less eligible" the lot of "improvidence and vice." It is saved from this last error not by the lore of economists, but because it regards economic questions through the eyes of a sturdy matter-of-fact morality. It is sufficiently enlightened to recognise that even among vagrants there is a class which is more sinned against than sinning, a class of whom it can be asked "at whose hands shall the blood of these men be required?"⁵⁶ It is sufficiently ingenuous to answer by pointing to "some covetous man" who, "espying a further commodity in their commons, holds, and tenures, doth find such means as thereby to wipe many out of their occupyings and turn the same unto his private.

⁵⁵ *Hist. MSS. Com.*, Marquis of Salisbury, Part VII., pp. 160-161. "Orders agreed to by the Justices of the Peace for Cornwall at General Sessions for Bodmin the 5th and Truro the 8th of April, 39 Eliz."

⁵⁶ Harrison, *loc. cit.*

gains."⁵⁷ Occasionally the effect of enclosures is brought home to the encloser in a practical way, by compelling him not only to pay a fine to the Crown, but also to make a contribution towards the relief of the poor whose numbers he has increased⁵⁸

To see the way in which the relation between the problems of pauperism and of agrarian depopulation is regarded, turn to the debates in the House of Commons. In the year 1597, when both questions are acute (the preceding year had seen a recrudescence of agrarian rioting), a member or minister, probably Robert Cecil, is preparing notes for a speech⁵⁹ on the subject in Parliament. What are the points he emphasises? They are the high price of corn caused by bad harvests and the manipulations of middlemen, the enclosing of land and the conversion of arable to pasture, which naturally intensifies the difficulty of securing adequate food supplies, "the decaying and plucking down of houses, . . . and not only the plucking down of some few houses, but the depopulating of whole towns . . . and keeping of a shepherd only, whereby many subjects are turned without habitation, and fill the country with rogues and idle persons." When Parliament meets in October, the House is at once busy with different aspects of the same question.⁶⁰ Bills are introduced dealing with forestallers, regrators, and engrossers of corn, with vagrancy and pauperism, and with enclosures, and a committee is appointed to consider the latter question. In the debates which follow there is the usual division of opinion between the champions of economic reform and the advocates of more, and more ruthless, "deterrence," between those who wish to legislate as to causes and those who are mainly occupied with symptoms Bacon, master as ever of the science of his subject, insists with invincible logic that pauperism is one part of the general agrarian problem, and he is supported by Robert Cecil. On the other hand, the experts as to pauperism—we can imagine the county justices fresh from their whippings and relief committees and houses of correction, fresh, too, from enclosure and depopulation—complain that their special subject is being overlooked in a general and dangerous discussion on the economic causes of distress, and that the committee "has spent all their travel about the said enclosures and tillage, and nothing about the said rogues and poor." That this should have been the popular line to take needs no explanation. A Parliament which dares discuss not only how to manipulate the lives of the poor, but the fundamental causes of their misery, is a Parliament which the eye of man had not yet, has not yet, beheld. Compared with other representative assemblies, compared with itself at a later date, the

⁵⁷ *Ibid.*

⁵⁸ Camden Society, 1886. Cases in Courts of Star Chamber and High Commission, Michaelmas, 7 Caroli, Case of Archer. (The allusion in the text is to a precedent cited in this case.)

⁵⁹ Hist. MSS. Com., Marquis of Salisbury, Part VII., Nov. 1597. "Notes for the present Parliament"

⁶⁰ D'Ewes' *Journal*, pp. 551-555, see also Leonard, *The Early History of English Poor Relief*, pp. 73-75.

Elizabethan House of Commons, debating in an age when it could be said that government was "nothing but a certein conspiracy of riche men procuringe theire owne commodities under the name and title of the Common Wealth," had the grace to show some stirrings of compunction. If members who had grown fat on the tragedy which they were discussing spoke of their victims as members will speak, ministers at least were independent, and could venture, like Cecil, to tell the House unpalatable truths. Of the two Acts against enclosure, which were the result of this session's deliberations, we shall speak later. What is worth noticing here is the disposition, even in a Parliament composed of country gentlemen, to emphasise the connection between the problems with which anti-enclosure and anti-vagrancy legislation have to deal. It is summed up in the eloquent peroration of a nameless member. "As this bill entered at first with a short prayer, 'God speed the plough,' so I wish it may end with such success as the plough shall speed the poor."⁶¹

What became of the families displaced from the soil between their final eviction and that subsidence upon the stony breast of the Elizabethan Poor Law, which, for some of them, was their ultimate fate? There is no certain information to guide us. The tragedy of the tramp is his isolation. Every man's hand is against him; and his history is inevitably written by his enemies. Yet, beneath denunciations hurled upon him by those who lived warm and slept soft, we can see two movements going on, two waves in a vast and silent ebbing of population from its accustomed seats. In the first place there is a steady immigration into the towns on the part of those "who, being driven out of their habitations, are forced into the great cities, where, being very burdensome, men shut their doors against them, suffering them to die in the streets and highways."⁶² The municipal records of the periods teem with complaints of the disorder, the overcrowding, the violation of professional bye-laws, caused by rural immigration. The displaced peasant is the Irishman of the sixteenth century, and, like the Irishman, he makes his very misery a whip with which to scourge, not alas! his oppressors, but men who often are not much less wretched than himself. He turns whole quarters into slums, spreads disease through congested town dwellings, and disorganises the labour market by crowding out the native artisan. Gild members find themselves eaten up by unlawful men who have never served an apprenticeship in the town, and retort with regulations requiring the deposit of a prohibitive sum as an entrance fee from all immigrants who want to set up shop, especially from those wretches who are thought to have a large family of children, at present snugly concealed in their last place of residence, but soon to be surreptitiously introduced, a brood of hungry young cuckoos, if once their parents get

⁶¹ *Hist. MSS. Com.*, Marquis of Salisbury, Part VII., pp. 541-543.

⁶² Lansd. MSS. 83, f. 68, quoted Gonner, *Common Land and Enclosure*, p. 156 n.

a footing in the town⁶³ Borough authorities, who see cottages "made down" into tenements in which pestilence spreads with fearful rapidity, seek to stamp out the very possibility of invasion by prohibiting the erection of new cottages or the subdivision of old. To judge by their behaviour, the notorious Statute of 1662, which codified the existing customs as to settlement, must have been one of the most popular pieces of legislation ever passed by Parliament. Town⁶⁴ after town in the course of the sixteenth century tries to protect itself by a system of stringent inspection worthy of modern Germany. Sometimes there is a regular expulsion of the aliens. "Forasmuch as it is found by daily experience," declare the authorities of Nottingham,⁶⁵ "that by the continual building and erecting of new cottages and poor habitations, and by the transferring of barns and suchlike buildings into cottages, and also by the great confluence of many poor people from forrein parts out of this towne to inhabit here, and lykewise by the usual and frequent taking in of inmates into many poor habitations here, the poorer sort of people do much increase . . . it is ordered that no burgess or freeman on pain of £5 erect any cottage or convert any building into a cottage in the town without license of the Mayor, that no burgess or freeman, without a license, receive any one from the country as a tenant, that every landlord be bound in the sum of £10 to remove all foreign tenants who have entered in the last three years before May 1st next." What most boroughs do for themselves is finally, after many regulations have been made by the Common Council, done for London by Parliamentary legislation. It is not a chance that the end of Elizabeth's reign sees the first two Housing Acts, one⁶⁶ in 1589, enacting that only one family may live in a house, the other⁶⁷ applying to London alone, and forbidding the division of houses into tenements, the receiving of lodgers, or the erection of new houses for persons who are assessed in the subsidy book at less than £5 in goods or £3 in lands. The evicted peasants are beginning to take their revenge. They have been taking it ever since.

In the second place there is a general movement from the enclosed to the open field villages. The families displaced by enclosure cannot easily enter into industry, even if they wish to do so, for the avenue to most trades is blocked both by the Corporations and by the statutory

⁶³ e.g. *Nottingham Records*, vol. iv pp 170-171, Nov 4, 1577 "Any burgess that hath not been prentice to pay £10 and no pardon. *Records of Leicester*, vol. iii, p 351, Oct 17, 1598: "He is inhibited from dwelling in your corporation unless he finds bonds for £200 that neither his wife nor children shall be burdensome to the town" *Southampton Court Leet Records*, vol. i, Part I. "One William Dye, undertenant to John Netley, dothe lyve idelly and hathe no trade . . . He hathe 4 or 5 children in places from whence he came whom he will bring shortly hither, yf he may be suffered here to remayne, whom we desyer may be examined and removed from hence according to the Statute."

⁶⁴ Some instances are given by Leonard, *Early History of English Poor Relief*, pp. 107-109.

⁶⁵ *Nottingham Records*, vol. iv. pp. 304-307.

⁶⁶ 31 Eliz. c. 7.

⁶⁷ 35 Eliz. c. 6.

system of a seven years' apprenticeship, which maintains professional standards at the expense of an unprivileged residuum. What they do is to follow the orthodox advice given to those who have lost their customary means of livelihood. They proceed to colonise, and to colonise in such numbers that they cannot easily be kept out. They settle as squatters on the waste lands of those manors which have not been enclosed, and which, before the waste is turned into a sheep-run, offer no obstacle to immigration. That the possibility of using the manorial waste to accommodate those who had no settled abode had occurred to statesmen as one expedient for meeting the problem of the infirm and destitute, is shown by the sanction expressly given in the Poor Law of 1597⁶⁸ to the expenditure of parish funds on the erection of cottages on the waste as residences for the impotent poor. In fact, however, the mobility of labour was becoming such that it was impossible, even if it had been desirable, to reserve those unutilised territories for the maintenance of the impotent. In spite of bitter protests from the existing inhabitants, refugees from other villages swarm down upon them in such numbers that the Act requiring four acres of land to be attached to each cottage cannot be observed, and the issuing of licences for the erection of cottages on the waste for able-bodied men, who have come with their families from a distance, becomes a regular part of the business of Quarter Sessions.⁶⁹ Such a redistribution of the population solves one problem only to create others. Stern economists in the seventeenth century lament that the ease with which permission to build cottages on the waste is obtained encourages the existence of an improvident and idle class, which will neither work for wages nor make good use of the land. "In all or most towns where the fields lie open and are used in common, there is a new brood of upstart intruders as inmates, and the inhabitants of unlawful cottages erected contrary unto law. . . . Loyterers who will not usually be got to work unless they may have such excessive wages as they themselves desire."⁷⁰ The opponents of enclosure answer with some justice that, in effect, the open field villages are saddled with the destitution caused by enclosing landlords, who first ruin their tenants and then, like a modern Dock Company which relies on the Poor Rate to save its wage-bill leave them to be supported by those places to which they are com-

⁶⁸ 39 Eliz. c. 3

⁶⁹ For petitions on this subject see *Hist. MSS. Com.*, Cd. 784, pp. 81-82 (Wiltshire). The Warwickshire Quarter Sessions were much occupied with this, e.g. the following "Trinity Sessions 1625 Forasmuch as this Court was this present day informed . . . by Sir Edward Marrowe, kt., and Thomas Ashley as the lords of the manor of Woolvey in this county . . . that the said lords are content that William Wilcox of Woolvey in this countie shall build and erect a cottage for hys habitation hys wyfe and his small children uppon the waste within the said lordshippe, it is therefore ordered that the same being with consent of the lord as aforesaid that the same cottage shall be and continue," and later "which cottage the Court doth licence" (*Warwick Quarter Sessions MSS. Records*).

⁷⁰ "Considerations Concerning Common Fields and Enclosures," *Pseudonimius*, 1654.

elled to migrate⁷¹ The latter difficulty is indeed a very serious one, which not only is the occasion of numberless petitions⁷² from villages who wish to be assisted by, or to avoid assisting, their neighbours, but on occasion converts even the country gentry into opponents of enclosure. "We further conceive," write the Justices of Nottingham to the Council, "that if depopulation may be reformed it will bring a great good to the whole Kingdom; for where homes are pulled down the people are forced to seek new habitations in other towns and countries, whereof those towns where they get a settling are pestered so as they are hardly able to live one by another, and it is likewise the cause of erecting new cottages upon the waste and other places who are not able to relieve themselves . . . which causes rogues and vagabonds to increase."⁷³ In the elaborate book of Poor Law orders published in 1631 the Government recognises the genuineness of this grievance, and, to its direction that richer parishes should contribute funds to the aid of the poor, adds a special rider pointing out that such extra contributions would come with special appropriateness from those places where there had been depopulation.

We may now summarise our view of the social effects of the changes introduced by lords of manors, and by the capitalist farmers who manage their estates. When the demesne land is enclosed and converted to pasture, there is an appreciable diminution in the demand for labour, and consequently an increase in unemployment. When the common rights of tenants are curtailed, they lose not only an important subsidiary source of income, but often, at the same time, the means of cultivating their arable holdings. When their holdings are merged in the great estate of the capitalist farmer, they are turned adrift to seek their living in a world where most trades and most towns are barred against them, where they are punished if they do not find work, and punished if they look for work without permission, where "if the poor being thrust out of their houses go to dwell with others, straight we catch them with the Statute of Inmates, if they wander abroad, they are in danger of the Statute of the Poor to be whipped."⁷⁴ Thus, quite apart both from the eternal source of poverty which consists in the recalcitrance of nature to human effort, and from those causes of individual destitution which in all ages and in all economic conditions lie in wait for the exceptionally unfortunate or the exceptionally improvident, for the sick, the aged, and the orphan, there is an increase in the number of those for whom access to the land, their customary means of livelihood, is unobtainable, and consequently

⁷¹ Moore, *The Crying Sin of England in not Caring for the Poor*: "And now alas, saith the poor cottier, there is no work for me, I must go where I may get my living. And hence it comes to pass that the open fielden towns have above double the number of cottiers they had wont to have, so that they cannot live one by another, and so put the fielden towns to vast expense, in caring for these poor that these enclosures have made."

⁷² e.g. *Hist. MSS. Com.*, Cd. 784, p. 95 (Wiltshire), pp. 292 and 298 (Worcester).

⁷³ See Appendix I., No. VI. Miss Leonard (*Trans. Royal Hist. Soc.*, vol. xix.) prints this document as referring to Norfolk, which appears to be an error.

⁷⁴ D'Ewes' *Journal* Speech of Cecil, 1597.

a multiplication of the residuum for whom the haunting insecurity of the propertyless modern labourer is, not the exception, but the normal lot. It is this extension of destitution among able-bodied men, who have the will, but not the means, to find employment, which is the peculiar feature of sixteenth century pauperism, and which leads in 1576 to the most characteristic expedient of the Elizabethan Poor Law—the provision of materials upon which the unemployed can be set to work. The recognition that the relief of the destitute must be enforced as a public obligation was not the consequence of the survival of mediæval ideas into an age where they were out of place, but an attempt on the part of the powerful Tudor state to prevent the social disorder caused by economic changes, which, in spite of its efforts, it had not been strong enough to control.

GEORGE UNWIN

The Merchant Adventurers' Company in the Reign of Elizabeth

From STUDIES IN ECONOMIC HISTORY: THE COLLECTED PAPERS OF GEORGE UNWIN (ed. R. H. TAWNEY), Part II, Chapter V, Pages 133-220. London: MACMILLAN & CO. LTD., 1927.

The Merchant Adventurers' Company in the Reign of Elizabeth¹

I. *The place of the Merchant Adventurers in English history*

THROUGHOUT the reign of Elizabeth, the Merchant Adventurers' Company supplied the only authorized channel for the largest and most lucrative part of the foreign commerce of England. It enjoyed a monopoly of the trade carried on by English subjects with the Low Countries and Germany, by virtue of which it controlled, not only the importation of most of the articles of foreign manufacture used in England, but also the exportation of the leading manufacture of England—its woollen cloth.

The exercise of this great commercial privilege carried with it a corresponding degree of influence upon the industrial activities of the country. It determined the flow of capital by which the fields of national industry were fertilized. With these powers and privileges, and indeed as the main justification for the possession of them, the Company of Merchant Adventurers performed fiscal functions of the greatest magnitude and importance. It furnished the main agency for the taxation of foreign trade, at certain periods it advanced money to the Government on the security of that taxation; and it served as the machinery for the repayment of the large sums which the Government had borrowed from international financiers. The Company, in short, played the part—unwillingly and, indeed, under compulsion—which the Bank of England a century later undertook as a matter of business.

In view of these undoubted facts it is sufficiently clear that we cannot hope to gain any adequate understanding of Elizabethan economic history, on the side either of commerce, of industry or of finance, without a careful study of the Merchant Adventurers' Company.

But mere facts do not constitute the sole claim of our subject upon the attention of the student. In economic history theories have usually filled quite as large a place as facts, and it is by the standard of theory, rather than by the standard of fact, that the significance of the Merchant Adventurers has been discussed and their importance measured. It has been claimed for them (almost entirely on a theoretical basis) that they were the protagonists in a great international conflict, the instruments of a far-sighted statesmanship, through which the commercial and industrial supremacy of their country for centuries to come was established.

¹ Lectures delivered at Oxford, 1913.

"To the effective aid of the Adventurers," says Dr Lingelbach, "was due in a very large measure the success of the commercial policy of the early Tudors. They won English trade from the foreigner, and laid for Englishmen the basis for their later commercial supremacy. . . . It is through the Adventurers' Society that Gresham was enabled to restore the financial credit of the realm and turn the rate of exchange in favour of England at a most critical period."

Later on, speaking of the struggle of the Adventurers' Company with the Hanseatic League, Dr. Lingelbach says:

"The rivals represented not merely the interests of two trading organizations, they are the exponents of great national interests and the representatives of rival civilizations, political as well as industrial. It was a struggle between the representatives of the mediæval organization and federative system of the Hanseatic League on the one hand, and exponents of the growing nationalism and the centralized monarchy on the other. . . . Even before the reign of Elizabeth, when the struggle was finally fought out, the English merchants, supported by the steadfast policy of the early Tudors, had seriously weakened the position of the Hanse in England. But the Adventurers did not stop the war with their success at home. They invaded the territory of the Hanse itself, and that at the invitation of one of the principal Hanse towns. . . . The reception of the Fellowship at Hamburg became the entering wedge which contributed so largely to the breaking up of the League of the Hanseatic cities."¹

The view which seems to be implied in these extracts from Dr. Lingelbach's introduction to his valuable edition of the Ordinances of the Merchant Adventurers is expressed emphatically and without reserve in the writings of some of the German scholars to whom we are indebted for most of our knowledge of the early history of European commerce.

One of the most distinguished of these, Dr. Bernhard Hagedorn, has recently given us an account² of the commerce of the port of Emden, which has cast more light on the trade and shipping of the sixteenth century than any other local history with which I am acquainted. When the Merchant Adventurers were driven from Antwerp, it seemed not unlikely that they would make their home permanently in Emden. Dr. Hagedorn describes their several temporary settlements there, and, in discussing the significance of these experiments and their influence on the history of Emden and of the Merchant Adventurers, he is naturally led to survey the whole trend of the commercial and industrial policy of the Tudors.⁴

Of all the European States of the sixteenth century, England, he tells us, was the one that pursued the most consistent economic policy. In this respect she was favoured by her natural conditions and her political development. Her insular character and the unity of the customs rendered practicable a stronger control of foreign trade than was possible in continental States. The expansion of the cloth manufacture, which the Government had fostered by all the means at its disposal, made the conquest of foreign markets a first necessity of English policy, and in the Merchant Adventurers' Company there lay ready at hand an almost perfect instrument of that policy. The textile craftsmen of the German towns were disabled by the high cost of living and by their gild regula-

¹ W. E. Lingelbach, *The Merchant Adventurers of England: their Laws and Ordinances*, 1902.

² B. Hagedorn, *Ostfrieslands Handel und Schifffahrt im 16. Jahrhundert*, 1910.

⁴ *Ibid.*, pp. 149 seq.

tions from competing with English country labour. The merchants and financiers of south Germany cared more about their commercial profits than about the industrial prosperity of their country. There was no powerful State in Germany to protect the craftsmen, to compel the conflicting mercantile interests to subordinate themselves to the larger good of the commonwealth, and to maintain the time-honoured privileges of German merchants in foreign countries, if needful, by force of arms. Little wonder, then, that the England of Elizabeth, though still far inferior to Germany in all the industrial arts, in the technique of commerce and in the power of accumulated capital, was enabled by the genius of her statesmen, wielding the irresistible force of a united people and pursuing a policy as resolute and remorseless as it was subtle and far-sighted, to break down the timid and vacillating defences of the Hanseatic League, and to lay the foundations of its economic supremacy on the ruins of German commerce and industry.

It is the claim of the Merchant Adventurers' Company to have been the protagonist in the great world drama which strikes the keynote of our subject, and which enhances the merely prosaic interest of the facts by the charm of a seductive theory. If, in addition to being, as we have seen it was, the natural centre in which the other economic activities—commercial, industrial, financial—of the Elizabethan age find their connections, and the standpoint from which they can most profitably be studied, the Merchant Adventurers' Company was actually the living organ through which these activities were successfully synthesized, the chosen instrument by which the genius of inspired statesmen determined, with prophetic foresight or by still more marvellous instinct, the future destiny of their country, then indeed bounds can hardly be set to the importance of the study which we are approaching. Deeply conscious, as we are, of the great constructive problems of our own time, we shall feel impelled to sit at the feet of the sixteenth-century statesmen and to search out the secrets of that creative insight which, if this theory be true, forecast and decreed three centuries of national progress.

But, before we can accept these conclusions, it is our business as historical students to examine in a critical spirit the assumptions on which they have been based. In the first place, we have assumed the existence of a connection, a close interaction, between the financial administration of Elizabeth's Government, the organization and expansion of commerce and the development of national industry, and we have assumed, further, that this threefold connection finds its natural focus in the Merchant Adventurers' Company. This is, perhaps, a large assumption, but I think we shall find much to be said in its favour. The second assumption is much larger and more questionable. It has been taken for granted that the interactions between public finance, commerce and industry were directed from above by the Government on the lines of a conscious, deliberate and consistent policy, conceived and adopted in the interests

of the people. And there remains a third assumption, which is by far the largest of the three, and which, by its very amplitude, should awaken the critical spirit of the scientific historian. It is that this policy of Elizabeth, or of her statesmen, not only was successful at the time, but has been, through the permanent results which it achieved, one of the main factors in national progress ever since.

For the first of these assumptions I shall hope to make out a reasonable case in the remainder of the present lecture. In the following three lectures I shall attempt, by a study of the relations of the Merchant Adventurers to Government finance, to Elizabethan commerce and to the leading Elizabethan industry, to examine the grounds of the second assumption. In the final lecture I propose to discuss the third assumption and, more especially, the view that the fabric of English commerce was erected upon the ruins of Hanseatic trade, which had been overthrown by the onslaught of the Merchant Adventurers.

Coming, then, to the first part of my task—to establish and illustrate the position of the Merchant Adventurers as a connecting link between the financial administration of the State, on the one hand, and the general body of national industry and commerce, on the other—I cannot express the nature of that relation better than by saying that the Merchant Adventurers' Company constituted a staple of cloth. They had come, that is to say, by the middle of the sixteenth century, to occupy the same privileged and exclusive position, in regard to the export of cloth, that the Company of Merchants Staplers had occupied for almost exactly two centuries in regard to the export of wool. That position, indeed, the Merchants Staplers still occupied. But the importance of the export trade in wool had been for about a century steadily declining, whilst, during the same period, the importance of the export of cloth had proportionately increased. The export duty on wool had been throughout the later Middle Ages one of the chief fiscal resources of the Government. In 1557 the export duty on cloth was revised; it was, that is to say, very considerably raised, with a view to rendering it an equally satisfactory source of revenue. It was at this time, 1553-1564, that the Merchant Adventurers' Company achieved a fully authorized and exclusive position as a staple for the export of cloth. Their depot abroad is, indeed, sometimes referred to as a staple, and, if this use of the term did not become general, it was due to the desire to avoid confusing the Adventurers with the Company of Wool Staplers, who still exercised their old rights and privileges, though many of the members had found it necessary to transfer their export business to the cloth trade. In actual fact, however, the Adventurers' organization had become by the time of Elizabeth's accession *the* Staple. It had displaced the Company of Staplers from its central position of fiscal and commercial pre-eminence, and its relations with the Government and with national industry were in all essentials the same as the earlier relations of the Staplers' Company.

From what has been said it will, I think, be clear that it is desirable for us to approach the study of the Merchant Adventurers' Company through a brief consideration of the earlier history of the Company of the Staplers, more especially since the affairs of the two companies had always been vitally related, in the way either of co-operation or of hostility, and since it seems likely that both companies sprang in the beginning from a common root.

In all the accounts of their history put forward for controversial purposes in the sixteenth and seventeenth centuries, the Merchant Adventurers claimed for their organization an origin somewhere in the thirteenth century. Modern scholars have been disinclined to admit this claim. The Adventurers had an obvious interest in proving themselves to be of greater antiquity than the Staplers. But, in all the essential features of their organization, the Adventurers as clearly belonged to the fifteenth and sixteenth centuries as the Staplers, whom they were displacing, belonged to the fourteenth and fifteenth. It is true that, in an inventory of documents drawn up in 1547, the Adventurers claimed to possess a charter of the year 1296, but, until quite recently, the earliest charter of theirs that was known to have come down to us was one dated 1407. The charter of 1296 has, however, lately come to light, as well as subsequent charters of 1305 and 1359.

These documents do not exactly prove that the Merchant Adventurers were of earlier origin than the Merchants Staplers. They take us back to a period before either of these organizations has come, as such, into existence, and seem to indicate that they had a common origin. The charter granted by the Duke of Brabant in 1296 extends, not only to all merchants of the realm of England, but also to all other merchants, of whatever land they may be, and it confers privileges of residence and self-government similar to those enjoyed by the communities of foreign merchants, such as the Germans of the Steelyard in England. The English merchants at Antwerp, who availed themselves of these privileges, dealt largely, perhaps mainly, in what were coming to be regarded as the staple exports of England—wool, skins, lead and tin, but they also exported other native produce, such as cloth, and they imported to England most of the commodities which were still being imported through Brabant by the Merchant Adventurers in the sixteenth century. They did not carry on their trade under the rigid restrictions which later on constituted the essence of staple organization. Yet it seems very probable that they did in some sense constitute a staple. The Duke of Brabant's charter to the English merchants in Antwerp appears to have been the direct consequence of the removal of the foreign staple of wool by Edward I from Holland to Brabant.

The beginnings of the process by which the local staple was gradually adapted to the purposes of national finance have never been adequately investigated, and they do not here concern us. By the end of the thir-

teenth century, two distinct and alternative types of national staple had come into existence, the home staples and the foreign staple. Sometimes the first of these types was authorized by the King, as the machinery for the exportation of wool, hides and tin, and sometimes the second. In the case of the home staples, ten or more leading English towns and cities were selected (others in Wales and Ireland) as the markets to which all foreign merchants who came to buy wool must resort, and in which all wool intended for exportation must be first offered to the native consumer. The main object of this restriction on the free trade in wool was to facilitate the collection of the export duty; but the effect of it would be to give the English merchants of the few larger towns thus selected an advantage over those of the numerous small market towns that dealt in wool. The foreign staple, when that was established, was still more restrictive in its operations. A single continental city was chosen, in close proximity to the great textile centres of the Low Countries, Antwerp, Dordrecht, Bruges or St. Omer, and all exporters were required to carry the wool for sale to that market. The objects sought by the establishment of the foreign staple were not only fiscal, but also political and diplomatic. The staple organization in this case was not only a means of collecting taxes, the fixing of it conferred an important favour on the King's continental allies, and it was used also as a means of transmitting subsidies to them. It seems to have been a necessary condition of these arrangements that the export trade should be confined to one or more small groups of native or alien merchants.

The struggle between these two different types of staple, or between the staple system in general and a demand for free trade in wool, went on continuously throughout the fourteenth century, and constitutes the central feature of the fiscal history of the period. All we can do here is to notice certain aspects of this struggle, which serve to cast light on the subsequent, and closely analogous, development of the Merchant Adventurers.

To begin with the simplest of these. The demand for the abolition of all staples, that is to say, for free trade in wool—the unrestricted and direct access of native and foreign buyers to the producer—was undoubtedly backed by a large body, probably by the majority, of the wool-growers represented in Parliament. Their view that they would gain by an unrestricted demand coincides with that of modern economists, and it is, moreover, extremely probable that the policy of a free and open trade (in the fourteenth-century sense, which did not exclude a considerable export duty) was the policy most conducive to the permanent interests of the revenue. At any rate, we find this policy adopted⁵ during what we may suppose to have been periods of relatively sound finance—the short periods of comparative peace, from 1328 to 1332 and from 1334 to 1337, in the intervals of the Scottish and French wars.

⁵ 2 Ed. III, st. 2, c. 9, Rymer, *Fœdera*, ed. 1816, etc., II, 879.

Next to the entire opening of the trade by the abolition of all staples, the course favoured by the Commons (that is to say, by the wool-growers) was the maintenance of staples within the realm. They preferred a set of home staples to a single foreign staple, on the ground that they furnished better chances for an effective demand, and made it less easy for a small ring of merchants to monopolize the export trade. For the same reason, we find the policy of a set of home staples supported by those merchants who were not in the ring. It was also favoured by the growing interest of the clothmakers, and the home staples were maintained, to the exclusion of a continental staple, during some twenty years of Edward III's reign.

If, then, a majority both of the growers of wool and of the merchants preferred an open trade, or, failing that, the maintenance of home staples, how are we to account for the fact that, during some twenty-five years of the reign of Edward III, the staple was held on the Continent, for three years in Antwerp, for twelve in Bruges and for ten in Calais?

There were two motives for this, one diplomatic, the other fiscal. The King used his control of the English wool supply as a means of gaining and keeping the alliance of the great clothmaking cities of Flanders against France. And, at the same time, he used it as a means of raising speedily for war purposes far greater sums than Parliament would sanction, or than the ordinary sources of revenue would afford. The first operations of the King as supreme wool merchant were carried on, indeed, with the consent of Parliament,⁶ given soon after the war broke out, and it was these operations that led to the re-establishment of the continental staple, which had been abolished on Edward's accession. But the later control by the King's agents of the export of wool through the staple at Bruges not only violated the constitution, and outraged every principle of sound finance, but inflicted a serious injury both on the growers and on the merchants. It limited the market in the interests of the King's allies, it limited the price paid to the grower in the interest of the King himself; and, finally, it limited the channels of trade in the interest of the King's agents. In 1343 the general body of merchants petition the King through Parliament that the staple may be brought into the realm, and, if this is impossible, that all ports may be opened to strangers and private merchants.⁷ There can be little doubt, therefore, that the famous Statute of 1353,⁸ by which the continental staple was abolished and the staples within the realm re-established, was supported, not only by the great majority of wool-growers, but by many of the merchants, and this in spite of the fact that native merchants were prohibited by it from the exportation of wool, which was placed entirely in the hands of aliens.

⁶ 11 Ed. III, c. 1.

⁷ *Rot. Parl.*, II, 143a.

⁸ 27 Ed. III, st. 2.

It has not been sufficiently realized that the majority of the English wool merchants were but small capitalists, who were mainly occupied in collecting the wool and carrying it to market. In times of peace a number of them might venture with a small cargo across the Channel. But generally it paid them to sell to alien exporters. At the end of the thirteenth century aliens were carrying out two-thirds of the wool exported. The alien merchants, whether Germans, Italians or Flemings, had larger capital, better ships, better methods of insurance, and may have enjoyed in war-time some of the benefits of neutral commerce. To allow them to buy their wool in England was, therefore, not only to provide the producers with their best market, but also to furnish the majority of the English wool-dealers with their safest and most profitable employment—that of bringing the wool to market at the home staples. The continental staple could offer advantages only to those larger merchants who could form a capitalist syndicate and make a deal with the King. And it was, no doubt, to facilitate such arrangements, as well as to serve the purposes of diplomacy, that the early staples were set up at Dordrecht, Antwerp and Bruges.

We are now in a better position to appreciate the significance of the final settlement of the staple at Calais, which had become an English possession in 1347. When, in 1363, the staple of wool was removed to Calais, there were loud popular protests. The King and the Black Prince, it was said, had both taken an oath never again to remove the staple out of the realm. In 1390,⁹ Parliament obtained the restoration of the home staples by the grant of a subsidy, and on this occasion, as in 1353, it seems to have been part of the popular demand that native merchants should not take part in the export trade. In 1392, however, the staple was again removed to Calais, and from the end of the fourteenth century, except for brief intervals, it remained there till the loss of Calais in 1557. It was in connection with this settlement of the staple at Calais that the Company of Staplers acquired a definite corporate existence, distinct from the general body of English merchants trading abroad. The chartered bodies of English merchants resident in Antwerp or Bruges had, doubtless, been connected in some way with the working of the earlier foreign staples in those cities, but they carried on much other trade as well, and, when the staple was removed to Calais, they remained as a body in Bruges. It is from them that the Merchant Adventurers' Company claimed descent. The Staplers' Company at Calais, according to this view, was an offshoot of the earlier Bruges Company, a group of merchants who specialized in the export of staple commodities, wool, hides and tin, who undertook certain fiscal responsibilities, became an organ of the customs administration, and, in return, secured a monopoly of that branch of the trade.

But how are we to explain the comparatively permanent settlement

⁹ 14 Rich II, c 1

of the staple at Calais, representing, as it certainly did, the transference of the chief branches of the export trade into the hands of a syndicate of monopolists? Why did Parliament, which had, in the interests of wool-growers and wool-dealers, so strenuously resisted this monopoly throughout the fourteenth century, accept it throughout the fifteenth century as the basis of its own regulation of foreign trade? I can only offer tentative reasons. In the first place, the earlier foreign staples at Antwerp or Bruges had been associated with arbitrary and unconstitutional taxation. The staple at Calais only collected the taxes authorized by Parliament. In the second place, the earlier foreign staples had been associated with the violent seizure of the whole wool supply for sale to the foreign clothworkers, whilst the demand for the home staples was supported by the growing interest of the textile manufacturers in England. But the institution of the Calais staple did not interfere with the home supply. On the contrary, by restricting the number of exporters, it was believed to serve the interests of the home consumer.

There was also, however, a third reason, which has, I think, been almost entirely overlooked. The earlier foreign staples had served several purposes, but perhaps the most important of these was their use as an organ of international finance. Through them the King was enabled to transmit immense subsidies to his continental allies. The King had no money to send, but, by exporting wool for this purpose, he was, to an equal degree, impoverishing the country. To speak in the economic phraseology of the time, he was preventing money from coming in. This was the worst evil of the foreign staple. Now the staple at Calais, as finally approved and regulated by Parliament, was intended to have exactly the opposite effect. It was designed to secure the nation against the export of its wool without a corresponding return in money. At one period the Staplers were required to deposit a large part of the value of the wool in money at the Tower before leaving the country. Later on, similar precautions were taken at Calais to prevent them from investing the returns in goods. The staple thus became the leading organ of what is called the bullionist policy. That policy, as embodied by Parliament in the staple, would have a higher degree of interest if it were found to be due, not entirely to the mistaken application of abstract principles, but partly to an effort to avoid the practical abuses which had arisen in the earlier foreign staple, when it was controlled by the Crown.

What is the bearing, you may ask, of this rather tedious account of the Staplers upon the history of the Merchant Adventurers two centuries later? Simply this, that in nearly every essential point the situation of the fourteenth century repeats itself in the sixteenth. Of course the circumstances and conditions, political, diplomatic, commercial and industrial, are widely different in the two periods. But the parallel is near enough to be striking and instructive. The position of the Staplers in the foreign staple, as a relatively small and exclusively privileged

body of wool exporters, was determined, on the one hand, by their relation to the Government and, on the other hand, by their relation to the wool-producers and to the unprivileged majority of wool-dealers. The Government conferred upon them a monopoly of the export trade, in consideration of their services in the collection of customs, the furnishing of loans and the payment of large subsidies to continental powers. The wool-growers and the wool-dealers regarded them with hostility, as limiting the market, lowering the price paid to the producer or the middleman and standing between them and the foreign merchants. If we put cloth instead of wool, clothiers instead of wool-producers, cloth merchants for wool-dealers, and the payment of debts for the transmission of subsidies, we may say of the Adventurers of the middle of the sixteenth century what we have said of the Staplers in the middle of the fourteenth.

The situation to which I have been trying to lead in the present lecture, and which will furnish the starting-point of my subsequent lectures, is the crisis that occurred in the years 1551-3. We are fortunate in possessing a clear, and even vivid, account of both the causes and the treatment of this crisis by one of the leading actors in it—Sir Thomas Gresham—in two historic letters written by him, of which one was addressed to the Duke of Northumberland very shortly before his fall, and the other to Queen Elizabeth very shortly after her accession.¹⁰ In the second of these letters, the great financier is endeavouring to initiate the young Queen into the mysteries of the foreign exchanges, as he understood them—or, at any rate, as he wished her to understand them. The essential point is this. There had been an immense fall in the exchange of England on Flanders. Thirty years before, in 1520, twenty English shillings were equivalent to thirty-two shillings Flemish. In 1551 they were only equivalent to sixteen shillings Flemish, and, as the Government of Edward VI was heavily in debt to the bankers of Antwerp, this state of the exchanges was a matter of the utmost concern to it.

"The first occasion," says Gresham, "of the fall of the exchange did grow by the King's majesty, your late father, in abasing his coin from 6 ounces fine to 3 ounces fine, whereupon the exchange fell from 26*s* 8*d*. to 13*s* 4*d*. . . ."

"Secondly, by the reason of his wars, the King's majesty fell into great debt in Flanders. . . ."

"Thirdly, the great freedom of the Steelyard, and granting of licence for the carrying of your wool and other commodities out of your realm"

"Now, for redress of these things, in the year 1551 the King's majesty, your late brother, called me to be his agent, and reposed a more trust in me, as well for the payment of his debts beyond the seas, as for the raising of the exchange . . . First, I practised with the King and my lord of Northumberland to overthrow the Steelyard, or else it could not be brought to pass. . . ."

"Secondly, I practised with the King's majesty, your brother, to come in credit with his own mere merchants, and, when time served, I practised with them."¹¹

¹⁰ J. W. Burgon, *The Life and Times of Sir Thomas Gresham*, 1839, vol. I, pp. 97, 463-4 (Letter to Northumberland, April 16, 1553) and 232-4, 483-6 (Letter to Queen Elizabeth, 1558).

¹¹ Burgon, *op. cit.*, vol. I, p. 484

We need not, for the present, carry Gresham's account further. I will discuss both his theory and his practice in my next lecture. The order of events is clear. The wars of Henry VIII lead to a great accumulation of debt and to a desperate debasement of the coinage to half its previous value. These causes produce a financial crisis under Edward VI. Gresham's remedy is to make use of the Merchant Adventurers, as the leading body of English merchants trading with the Netherlands. But, in order to make effective use of them, he must give them a complete monopoly, and this involves the suppression of the privileges of the German merchants of the Steelyard. This was no light matter. The merchants of the Hanseatic League had for three centuries taken a leading part in the foreign trade of England. They brought in most of the Baltic produce imported—corn, timber, skins, naval stores—and they carried on, through their depot at Bruges, most of the English trade with middle and south Germany. They had hitherto supplied one of the main channels for the constantly increasing exports of English cloth to Germany, eastern Europe and Russia. At the beginning of Henry VIII's reign they exported annually some 20,000 pieces. The amount had steadily grown since that time, and in 1549 it leapt to 44,000 pieces. The value of this can have been little less than a quarter of a million sterling, which was the extent of the ordinary revenue of the Crown at this period. Nevertheless, the privileges of the Hanse were suspended in February 1552,¹² with a view to forcing the whole of the export trade into the hands of the Merchant Adventurers, and thus rendering them a more efficient instrument of the financial manipulations of Gresham.

The close connection between the position of the Merchant Adventurers and the exigencies of Government finance is, I think, fully made out. It remains to indicate briefly the connection which the new situation has with the general commerce of England and with its leading industry. On the first of these points Gresham is again our best authority. In his letter to the Duke of Northumberland in April 1553, he describes a conflict then raging within the Company itself. The Adventurers had always claimed to represent the whole of England—provincial ports as well as London—but the natural tendency had been for them to become a close corporation, representing a predominantly London interest. An Act of Parliament in 1497¹³ had lowered the entrance fees and declared the Company open to provincial merchants; but those admitted in consequence of this Act—the members of the New Hanse, as they were called—were never admitted on the same footing as the members of the Old Hanse, and could not introduce their sons and apprentices on that footing. The question had again been raised in 1551-2, and it vitally affected the expansion of English trade. To show how the settlement of it was connected with the crisis already described, I need only cite a

¹² See below, p. 235.

¹³ 12 Hen. VII, c. 6.

passage from Gresham's letter to the Duke of Northumberland:

"And to be plain with your grace," he says, "you shall never be able to bring this [his financial scheme] to pass, except it may please the King's majesty to make a present stay, that there shall be no more made free of this company of the Merchant Adventurers of the new Hanse from this day forward."¹⁴

Finally, there is the connection of the situation which we have been considering with the industrial conditions of the period. In April 1550, certain clothiers had complained to the Privy Council that the Merchant Adventurers had, by agreement, fixed the price they gave for cloth so low that the manufacturers lost £1 on each piece. Other clothiers, however, who were called up and questioned, denied any complicity in the complaint. The Adventurers, they said, were not to blame. The real cause of the trouble was that there were too many clothiers, many of whom had never served a regular apprenticeship to the business. The true remedy was to restrict their numbers and to regulate the making of cloth more carefully.¹⁵ The Government took immediate action in the direction suggested. After a Committee of Parliament had heard the evidence of "divers honest clothiers"—presumably those who defended the merchants and wished for regulation and restriction—and also the evidence of the London merchants themselves, a great code was drawn up, minutely regulating the manufacture of every species of cloth, which passed into law¹⁶ and remained the basis of all subsequent legislative interference with the trade. This was accompanied by another enactment,¹⁷ closely restricting the setting up of new employers in the cloth industry by demanding from them seven years' apprenticeship at weaving.

In view of these facts there can, I think, be no doubt that we are justified in making the Merchant Adventurers' Company the starting-point and the centre of an inquiry into the connection between Government finance, the organization of foreign trade, the regulation of industry and the commercial relations of England and Germany during the reign of Elizabeth. We may even take it for granted that there existed a causal relation, a vital interaction of some kind, between these different aspects of economic development. But, as to the nature of that interaction and its wider historic significance, I must ask you to suspend your judgment till we have discussed each of these separate aspects in its turn.

II. *The Merchant Adventurers and the national finances*

I propose to consider in this lecture the connection of the Merchant Adventurers' Company with the financial policy and administration of the Government of Elizabeth, and the most profitable way of doing this will be to concentrate our attention on the situation indicated in my last

¹⁴ Burges, *op. cit.*, vol. I, p. 463.

¹⁵ *Acts of P.C.*, Ap. 28, 1550 (vol. III, pp. 19-20).

¹⁶ 5 & 6 Ed. VI, c. 6

¹⁷ 5 & 6 Ed. VI, c. 8

lecture, in which Sir Thomas Gresham was the central figure, and for the history of which his letters are the leading authority

Thomas Gresham had qualified himself as a Merchant Adventurer by a regular apprenticeship, but at the age of thirty-two, in 1551, he became the financial agent of the Crown. The financial condition of the Government of Edward VI was at that moment desperate. A large debt had been accumulated to the foreign bankers at Antwerp, and the credit of the country was at a low ebb. The coinage had been several times debased. What passed for a shilling did not contain more than four-pennyworth of silver, with the consequence that, not only were trade and industry at home completely demoralized, but commercial and financial relations with foreign countries were entirely dislocated.

Under the stress of this crisis, Northumberland and the Council tried, on Gresham's advice, a variety of desperate remedies. One of these, but only one, was Gresham's famous device of using the Merchant Adventurers to pay off an instalment of Government debt at a favourable rate of exchange. This feat, which involved the withdrawal of the privileges of the Hanseatic merchants,¹⁸ and the bestowal of a monopoly on the Adventurers, was apparently first performed in October 1552, and was repeated in May 1553.¹⁹ Soon afterwards, King Edward died, Mary became Queen, Northumberland was executed for treason and, at the request of Philip, the Hanseatic privileges were restored.²⁰ But Gresham contrived to retain his position as foreign financial agent to the Crown, and in 1554, 1555 and 1556, the Government of Mary continued to follow his policy of using the Merchant Adventurers to pay its debts.²¹ At the same time, it once more restricted the trading rights enjoyed by the Hanseatic merchants, till, in 1557, the League broke off trading relations with England.²² Elizabeth, on her accession, renewed Gresham's office in the most gracious terms. He had now another financial crisis to face on behalf of the Government, and he recommended the adoption of his old device, giving, at the same time, that exposition of financial and commercial policy which I have already cited.²³ The series of loans from the Merchant Adventurers was renewed in 1559, and was continued in 1560 and 1561.²⁴

It was during this period that the connection between the Merchant Adventurers' Company and the Government became closer than ever before or after. The Company became one of the chief financial resources of the Government. The Government, in its turn, bestowed unique

¹⁸ *Acts of P C*, Feb 24, 1552 (vol III, pp 487-9)

¹⁹ For 1552 see Burgon, *Life of Gresham*, vol I, p 466, and for 1553, *ibid*, p 98, and *Acts of P C*, May 5, 1553 (vol III, p 267)

²⁰ Ehrenberg, *Hamburg und England*, 1896, pp 53-4

²¹ *Acts of P C*, Aug 27, 1556 (vol V, p 339)

²² Ehrenberg, *op cit*, p 55

²³ See *ante*, pp 232-3

²⁴ Burgon, *op cit*, vol I, pp 257-62 (1559), 334-7 and 347-53 (1560), 395 and 489 (1561)

privileges upon the Company. By the withdrawal of the privileges of the Hanseatic merchants in 1552, the Government intended to throw the main bulk of the trade between England and the Netherlands into the hands of the Adventurers, and, by the charter of 1564, the monopoly of the Company was further safeguarded against the competition of other English merchants. As to the close connection between financial and commercial policy there can be no doubt whatever. The questions, however, as to how the connection was brought about, how it worked at the time, and what effect it had on the subsequent development of commerce, all remain to be answered.

In my last lecture I tried to indicate the view that has been most commonly adopted. Let me once more cite Dr. Lingelbach's account:

"To the effective aid of the Merchant Adventurers was due in a very large measure the success of the commercial policy of the early Tudors. They won English trade from the foreigner, and laid for Englishmen the basis for their later commercial supremacy. . . . It is through the Adventurers' Society that Gresham was enabled to restore the financial credit of the realm and turn the rate of exchange in favour of England at a most critical period."²⁵

Dr. Hagedorn's conclusions are much the same.

"The Merchant Adventurers," he writes, "represented the greatest financial power in England. And so it came about that the Crown entrusted much of its own business to the Adventurers, and that Thomas Gresham, the great merchant who was entrusted with all the affairs of the Company, was appointed in 1551 the financial agent of the Crown in Antwerp. There thus grew up a systematic and intimate connection between policy and trade, which found its centre in Elizabeth's leading minister, Cecil. The members of the Company were at the same time political agents of the Government. The Company, on the other hand, lent itself to the attainment of the mercantilist aims of the Government. Each worked into the hands of the other."²⁶

To pass from the acceptance, as an undoubted fact, of the connection between the 'Merchant Adventurers' control of trade and Government financial policy, to the view as to the nature and results of that policy expressed by Dr. Lingelbach and Dr. Hagedorn, may seem but a short step; and it is certainly a step which many readers of history will be willing to take. But it is not less certainly a step which begs some of the fundamental questions of economic history. Can statecraft perform these feats? Can a Government, at a critical moment, with the assistance of a monopoly of foreign trade, raise the rate of exchange in its own favour, and thereby restore the credit of the realm? Can it so operate with such a monopoly as to secure a new financial stability for itself, and at the same time lay the foundation of commercial supremacy for the country? If it can, the economic philosophy of Adam Smith is a vain thing. We must burn *The Wealth of Nations* and return to earlier authorities of the Mercantilist School. But, before doing so, it will be well to examine the evidence.

Until the recent publication of Dr. W. R. Scott's great work on English Joint-Stock Companies,²⁷ Gresham's account of his own exploits had been

²⁵ See above, p. 224.

²⁶ B. Hagedorn, *Ostfrieslands Handel und Schiffahrt im 16. Jahrhundert*, p. 154.

²⁷ *The Constitution and Finance of Joint-Stock Companies to 1720*, 1910-1912.

widely accepted, with very little attempt at critical discrimination. Yet, surely, that account is such as to invite criticism. It is contained in letters written by the financial agent and official stockbroker of the Crown in order to review and justify his past management of affairs and to recommend his future services to his august employer. Even supposing that our high regard for the character of the writer should lead us to accept without scrutiny the business details of such a record, it might still happen that the views incidentally expressed therein, as to the broader and deeper significance of the events related, would require some correction in the light of subsequent developments and of historical science. Nor can there be anything painfully invidious or ultra-sceptical in a criticism which derives its chief *data* from the copious correspondence of Gresham himself.

A very brief glance at that correspondence suffices to dispose of one of the assumptions of Dr. Hagedorn—that Gresham was equally in the confidence of the Adventurers and of the Government, and that the Government and Company played into each other's hands. Whatever position Gresham may have previously held within the Company, he certainly ceased to be entrusted with its affairs after he became financial agent of the Crown, and his great devices for extorting loans from the merchants, and for raising the exchange, were necessarily matured in secret, were strenuously resisted by the Adventurers before they were carried out, and were bitterly resented afterwards.

A couple of extracts from one of Gresham's letters will serve to prove this point. He is writing to Cecil, in March 1559, to recommend the repetition of the device which he had practised in Edward VI's time. For the payment of the Queen's debts, he says, and for keeping up the exchange,

"the Queen's Majesty hath none other ways and help but to use her Merchant Adventurers. Wherin I do right well know they will stand very stout in the matter, by the reason of this new custom [on cloth], as also for the £20,000 that her Highness doth owe them. Nevertheless, considering how much it doth import the Queen's Majesty's credit, of force she must use her Merchants."

And at the close of the letter he thus describes his previous exploits:

"The exchange in King Edward's time (when I began this practice) was but 16s. Did I not raise it to 23s., and paid his whole debts after 20s. and 22s.? Whereby wool fell in price from 26s. 8d. to 16s., and cloths from £60 a pack to £40 and £36 a pack, with all other our commodities and foreigners', whereby a number of clothiers gave over the making of cloths and kerseys. Wherein there was touched no man but the merchant, for to serve the Prince's turn."²⁸

Gresham, it is true, proceeds to argue that the merchants would benefit in the long run; but, even supposing his argument to be sound, it would afford small consolation to the merchants and clothiers who suffered bankruptcy at the moment. The facts, therefore, do not support the assumption that the Government and the merchants played into each other's hands.

²⁸ Burgon, *op. cit.*, vol. I, pp. 257-61.

And the same is true of the assumption that Gresham's earlier devices were successful, as a whole, from the financial point of view, as the author of them implies in his letters to Elizabeth and Cecil. Gresham's schemes for retrieving the financial position of the Crown in 1551-2 included several items which he does not afterwards venture to recall. Alongside the monopoly which the Government were to confer on the Adventurers for reasons of Crown finance, Gresham proposed other monopolies for the same reasons. The lead monopoly—or staple of lead—was operated by Gresham himself, who was also to be invested on behalf of the Government with a monopoly of the foreign exchanges. Within a few months both these schemes collapsed. In October 1552 Northumberland wrote to Cecil urging him to reconsider the advisability of maintaining the lead monopoly.

"For I put you out of doubt the clamour and exclamation grow great, and may breed more danger than can now be seen . . . which maketh me sorry that ever it was my hap to be a meddler in it . . . For princes' affairs, specially touching the government of realms, and merchants' trades are of two natures, therefore, though they be full of devices with appearance of profit, yet must they be weighed with other consequences."²⁹

The lead monopoly was, accordingly, abandoned, and, at the same time, the foreign exchanges were once more thrown open. But that did not measure the full extent of Gresham's failure. In order to render the Adventurers' Company more amenable to financial manipulation, he had proposed to limit the number of its members. A Bill was introduced into Parliament to authorize this, but the excluded merchants collected funds, and raised such an opposition that the Bill was thrown out.

Gresham's much-vaunted exploit of 1553—his raising of the exchange by means of a forced loan from the Adventurers—was thus the only remnant saved from the shipwreck of many schemes; and for that reason, perhaps, its success was to the last the most cherished memory of the great schemer. But what did that success amount to? Here we come to the difficult question of the exchanges, and, before we can explain its full significance for the commercial history of the sixteenth century, we shall have to widen the scope of our inquiry. But the simplest aspect of the exchange is so very simple, and so completely obscured by Gresham's language, that it will be well to clear it out of our way at the outset. Gresham talks of the exchange having fallen from 32*s* to 13*s*. 4*d*, and tells us that he himself raised it from 16*s*. to 23*s*. What do these great changes mean? A modern parallel may make matters clearer. If an English sovereign contains just as much gold as is worth twenty-five francs in France, the relation between the sovereign and twenty-five francs is called the "mint-par" of exchange. You may get a penny farthing more, or a penny farthing less, than twenty-five francs for your sovereign, according as the rate of exchange on France is favourable or unfavourable to England; but, in normal times, the rate of exchange will not deviate more than this from the mint-par. In the sixteenth century the deviation

²⁹ *S P D.*, *Edw VI*, vol. XV, no. 37. See also Burgon, *op. cit.*, vol. I, pp. 94-5

of the rate of exchange from the mint-par was, normally, owing to reasons which I shall explain presently, much greater than a penny farthing, and might, in very extreme cases, be as much as a shilling either way. How, then, are we to account for the fall in the English exchange on Antwerp from 32s. to 13s. 4d., which, according to Gresham, had taken place during the reigns of Henry VIII and Edward VI? The answer is simple. It was a fall in the exchange mainly due to an alteration in the mint-par itself, consequent upon the debasement of the English coinage. Gresham himself admits this. He accounts for the fall from 26s. 8d. to 13s. 4d. by the reduction of the amount of silver in the English shilling by one-half, from six ounces fine to three ounces fine.³⁰ But then, having to account for the previous fall of the exchange from 32s. to 26s. 8d., he prefers to explain this as a result of the over-trading which he wants the Government to stop.³¹ In point of fact, the whole of the fall from 32s. to 13s. 4d. can be fully accounted for by the same cause, namely, an alteration in the mint-par.

King Henry VIII had reduced the amount of silver in all weight of coinage from 11 oz. to 10 oz., from 10 oz. to 6 oz., and from 6 oz. to 4 oz. The Government of Edward VI further reduced it from 4 oz. to 3 oz.³² The simple, direct and inevitable result of these reductions was that twenty shillings of English money, which had in 1520 contained the equivalent in silver of 32s. Flemish, were in 1550 only the equivalent of 13s. 4d. Flemish. There are none of the deeper mysteries of statecraft or of economic science in this explanation. Nor is it harder to account for the subsequent rise of the exchange. In 1550 the exchange reached its lowest point. In that year the coinage was at its worst. What passed as a shilling was only worth threepence or fourpence. The terrible social and economic disturbances that resulted compelled the Government to attempt the restoration of the coinage. In August 1551 the Government reduced the coinage to half its face value, the shilling to sixpence, the groat to twopence, and the twopenny-piece to a penny.³³ The restoration was not complete. Two debased shillings were now to pass for one shilling. The debased shilling contained at this time about one-third of its former amount of silver. What now passed for a shilling contained about two-thirds of the amount of silver that had been put into the shilling before the debasement began. In 1552 and 1553 the exchange rose till it stood between 21s. and 22s. This, you will observe, is about two-thirds of the old rate of 32s. It is clear that the broad movements indicated by Gresham can be accounted for by simple mechanical causes, and require no great subtlety of economic science to explain them. And we may be quite sure that Gresham was fully aware of the operation of those causes.

³⁰ See above, p. 232.

³¹ Burdon, *op. cit.*, vol. I, p. 464.

³² Ruding, *Annals of the Coinage*, 1840, vol. I, pp. 309-10, 319-20.

³³ R. R. Steele, *Proclamations of the Tudor and Stuart Sovereigns*, 1910, vol. I, no. 404.

When, therefore, he talks of raising the exchange by his own financial manœuvres from 16*s.* to 23*s.*, we cannot acquit him of deliberately seeking to mislead his correspondents. He was probably quite aware that he had not done all that he claimed.

At the same time, he was almost certainly sincerely convinced that he had raised the exchange in another sense—that he had made it favourable to England instead of unfavourable. This was a change quite distinct from, and independent of, the alterations of the mint-par. There might have been an unfavourable exchange for England with Antwerp when the rate was as high as 32*s.* (if the mint-par was 32*s. 6d.*), or a favourable exchange when the rate was as low as 13*s. 4d.* (if the mint-par was 13*s.*). In other words, the exchange of one country with another is said to be favourable when its merchants are offered a rate above the mint-par, and unfavourable if they are offered a rate below the mint-par. This rise and fall of the rate of exchange above and below mint-par depends on the fact that the same quantity of silver or gold may be worth more—have more purchasing power—in one country than another. If a trader in a country where money is worth more owes a debt to a country where money is worth less, he will avoid paying in money if there is any other way of doing it. If he will lose sixpence in the pound by paying in money, and a banker offers to pay the debt by a paper transaction for threepence in the pound, he will make use of the banker. On the other hand, a trader in a country where money is worth less will prefer to pay his debt to the other country in money, unless the cost of sending the money is greater than the difference in value. In short, a country where money is worth more will tend to have money imported into it, and such a country will have a favourable rate of exchange with the country from which the money is tending to be exported.

A favourable rate of exchange is, therefore, an effect, and not a cause, of the flow of bullion towards a given country. One cause of such a flow is the comparative lowness of the level of prices in that country. In the middle of the sixteenth century, there was normally a flow of bullion towards England, as towards the rest of Europe, from the new mines in America. The stream passed through Antwerp to England, and England had, therefore, normally a favourable exchange with Antwerp. What Gresham claimed as his greatest achievement required no miracle of good statecraft to produce; it was the normal result of natural causes. How, then, could he persuade himself or others that he had achieved it? Simply because the Government, by a miracle of bad statecraft, had previously produced a temporary and abnormal condition of exchange. The inevitable effect of the debasement of the coinage had been to drive the better coinage out of the country, so as to realize its true value as bullion elsewhere. This temporary outward flow would naturally cause the exchange to become for the time unfavourable to England. But, as soon as that outflow, due to entirely abnormal causes, was over, the normal

inflow would be resumed, and in greater volume than usual because the country had been depleted of its bullion by the dishonesty of its Government. The exchanges would once more become favourable—and, indeed, would be unusually favourable—till the abnormal outflow had been counterbalanced.

Gresham was thus like Aesop's fly on the chariot-wheel, but there can be little doubt that he honestly believed he had raised the dust—raised, I mean, the exchange, and thus produced an inflow of bullion. The doctrine which he consistently expounded to Northumberland, to Cecil and to Elizabeth, that the rate of exchange was the cause, the *primum mobile*, of the flow of bullion and of a profitable foreign trade, and that the determination or manipulation of the rate of exchange should be a primary concern of the Government, was no invention of his own, but part of the most widely accepted economic theory of his day. We may now pass, therefore, to a consideration of the connection of that theory with public policy.

The doctrine expounded and acted upon by Gresham is intermediate between that of the bullionists and that of later mercantilist thinkers, like Thomas Mun.³⁴ The bullionist wished to regulate the flow of bullion directly, and was opposed to all private exchange operations. The mercantilist wished the Government to leave both the flow of bullion and the operation of the exchange perfectly free, and to confine itself to securing a proper balance of trade. Gresham argued that the flow of bullion might be left alone, and that the operation of the exchange might be freely allowed, as long as the rate of exchange was favourable to England, and that it was the business of the expert State financier like himself to keep the rate favourable.

A free flow of bullion, directed by purely economic forces of international supply and demand, through the fluctuations of the rate of exchange, was the only possible basis for a development of international credit. The assertion of this principle is the fundamental point in the later mercantilist doctrine. The fundamental point of the bullionist doctrine was the denial of it. Gresham's doctrine was a compromise. He admitted a flow in one direction only. He felt the necessity of tolerating the exchanges as the organ of international credit, but he wished to make international credit entirely subservient to the necessity of the State.

It is an undoubted fact, says Voltaire somewhere, that spells and incantations are capable of destroying whole flocks of sheep, if accompanied by sufficient quantities of arsenic. This saying has always appeared to me to afford a suggestive introduction to the study of the influence of ideas, of theory, upon economic development. Not that the parallelism is altogether sound or complete, but it furnishes a useful corrective to a tendency which is as misleading as it is all but universal—the tendency

³⁴ *England's Treasure by Foreign Trade*, 1664.

to over-estimate the active part which wise forethought and the deliberate pursuit of clear ideas has played in the economic history of nations. In the sixteenth century it is especially necessary to look behind the spells and incantations of theory for the arsenic of practical motives.

Gresham's account sufficiently proves, I think, that, whatever the results of the connection between the Government and the Merchant Adventurers, it had its origin and mainspring, not in the disinterested desire of the Government to realize any particular theory of trade, but in the urgent pressure of the Crown's own immediate needs. Throughout the reign of Edward VI, in Mary's reign, on the accession of Elizabeth, the Crown wanted money, and wanted it imperatively. Elizabeth began her reign heavily in debt, and wanted to borrow more—for national defence, for the Scotch war, for the French war. War finance is always bad finance. There are, no doubt, degrees of badness. The war finance of Pitt was bad, that of Edward III was worse. Judged by these standards, or by the standard of her own later years, the finance of Elizabeth's accession may possibly be entitled to a favourable verdict. Judged by the standards of peace, it must be condemned. Nothing but a war of self-preservation could justify it. During these years Elizabeth sold a large quantity of Crown lands. She was living on her capital, because she could not wait for the interest. She was sapping her credit, because she must have cash. Under such circumstances, we should expect any theory of foreign trade held by Elizabeth, by Burleigh or by Gresham to be dominated by considerations of necessity of State.

Their position, though illogical, is not hard to understand. It was the joint product of the practical bullionism of the Government—its need of ready money for its own purposes—and of the theoretical bullionism of popular opinion. And the peculiar monetary conditions of the time reinforced the operation of both these causes. New and plentiful sources of bullion had been opened in Spanish America, and broad streams were continually flowing eastward to Europe, and, after a time, overflowing even to Asia. As these streams widened and spread, the existing stores of individuals and States dwindled in value, and the desire to divert the flowing stream in one's own direction, and to prevent its ever flowing back, became irresistible. If we look over the shoulder of Gresham at Antwerp, as he sits inditing those letters to Mary, to Elizabeth, to Cecil, which tell us more of the international finance of the period than any other source, we seem to see precious argosies for ever upon the offing. Another fleet worth a million ducats, say the knowing ones on 'Change, has been sighted at Seville, and more than half of it is already discounted by the south German bankers at Antwerp. Then we may see Gresham, who has bargained for a portion of the costly freight, secretly busy melting it down into ingots, that he may smuggle it more safely, concealed in suits of armour, to England.

From the calm vantage ground of our own distant age, we think we

understand the laws that governed this flow of bullion. Indeed, within a single century of Gresham's own age, Parliament had already seen the futility of seeking to control the flow of bullion by enactment. The Act of 1663, that repeals the restrictions which, in spite of continual evasion, had hampered foreign trade for centuries, repudiates the bullionist doctrine in the most emphatic manner "It is found by experience," says section nine of that Statute, that money and bullion "are carried in greatest abundance (as to a common market) to such places as give free liberty for exporting the same"³⁵ I have carried you on to the middle of the seventeenth century, in order that we might see the facts of the sixteenth century as they appeared in retrospect. From that point of view the futility of bullionist restrictions is clear. We see the stream of gold and silver—in spite of rigid enactments and heavy penalties—leaving Spain and Portugal, where the level of bullion is highest, and prices accordingly are also highest, and seeking irresistibly those countries, like England, where the level is lower, but on the way thither tending to flow through those ports which, like Genoa and Amsterdam, by allowing perfect freedom of export, furnished the best common markets and distributing centres.

There were, however, great obstacles to the free flow of the stream. The cost of mere freight was much greater than now, the risks of wreck and piracy were enormously greater, and the expense of evading legal restrictions constituted a third heavy charge on the transport of bullion. For these reasons there might remain, in spite of a continual flow of bullion, a considerable difference of level between two adjacent countries, and, in consequence, a similar variation in the value of money and in its purchasing power.

It is easy enough to understand how the manipulation of these fluctuating values of international exchange would lead to the development of a professional class of exchangers, and how their operations would pass by degrees into a form of banking. Amongst the Italians, the combination of exchanging and banking was probably well established before the close of the thirteenth century, and it was quite general throughout Europe by the close of the fifteenth. The international exchange supplied both the would-be investor and the would-be borrower with one of the best means of evading the usury laws Under cover of exchange operations, the international banker would, in one case, be receiving a deposit, in another case be making an advance. And in this way, by the beginning of the sixteenth century, a system of international credit had grown up, by which the spare capital of one country could be invested in the commerce or industry of another country.

A contemporary account³⁶ shows us clearly how the foreign trade of

³⁵ 15 Car II, c. 7, s 9

³⁶ "A Treatise concerning the Staple," in *Drei volkswirtschaftliche Denkschriften aus der Zeit Heinrichs VIII*, ed R. Pauli, 1878, pp 15-43.

both the Staplers and the Adventurers was being expanded by the system of credit and banking. Since the Merchants Staplers were constantly exporting goods to, and the Merchant Adventurers importing goods from, the same parts of the Continent, why should they not, by mutual arrangements through bills of exchange, save the expense of importing bullion and ballast, make a goodly profit on the rate of exchange, and secure a far more rapid turnover of their respective capitals? Scarcely had this new business relationship been set up than the capital and enterprise of the Merchant Adventurers began to flow over into the Staplers' trade of exporting wool, and to destroy its exclusive and limited character. Agents were sent to scour the country for more wool. Landlords and farmers, having discovered that wool-growing would pay, began to rear sheep on land which the Creator had not originally designed for that purpose. In this way the earlier epoch of enclosures began.

Now, if the capital of the Adventurers was thus overflowing into the wool trade, one may infer that it was expanding within its own original sphere—that of the export trade in cloth. And of this the writer of the treatise referred to above furnishes abundant evidence, though he is surveying the facts from a widely different point of view, and with no friendly eye:

"The breeding of so many merchants in London, risen out of poor men's sons, hath been a marvellous destruction to the whole realm. . . So about a fifty years ago such young merchants began to increase in number, that bought so many cloths of cloth-makers for respite [*i.e.* on credit], and sold them in Flanders at the marts of good cheap to make return to pay their creditors, that in short time they destroyed the price of woollen cloths, causing all the old merchants to fall from buying and selling cloths. . . In such wise, rich old merchants . . . seeing the price of cloth and the danger and trouble of buying strange merchandise is so casual, for a more ease and less labour . . . occupy their money by exchange, winning profit both inward and outward, which is plain usury."³⁷

In other words, the rapid expansion of the cloth manufacture had called into existence a new and more active class of intermediaries to find a market for it abroad. The capital with which they worked came from two sources. The clothiers gave them credit for the cloth, *i.e.* received payment in bills and promissory notes, whilst the rich old merchants, now become bankers, made advances through the exchange, which were equivalent to our modern discounting of bills.

The German merchants of the Steelyard acquired, in spite of the opposition of the Londoners, the right of dealing directly with English country clothiers in London, played a large part in the expansion of the export trade, and served, like the Merchant Adventurers, as links in a growing system of international credit.

The centre—the focus—of the system was Antwerp, where the Merchant Adventurers and the Hanseatic merchants met on neutral ground. The attraction that drew them there lay in the fact that Antwerp combined an international cloth market with an international money-market. It was not only the Manchester, but the London, of the sixteenth century.

³⁷ Pauli, *op. cit.*, pp. 33-4.

Its position was, indeed, unique and unprecedented. The great mediæval fairs had been temporary centres of international finance, and most of the forms of commercial credit and of banking had there first come into general use. Antwerp bade fair to become the first permanent money-market, the first banking centre, in the history of modern Europe.

The origin of this development was the same as that already indicated in the case of England. The "rich old merchants" of south Germany, who had made fortunes in commerce, in mining and in the textile industries, and who, like most mediæval merchants, had earlier combined money-lending with commerce, began to specialize in banking and finance. The new stream of bullion flowing from America supplied ample materials for their operations, and the rival dynasties of Europe, who had begun to think in continents and to borrow in millions, furnished them with their chief customers. But not with their best customers, nor with their soundest or most profitable business. The two greatest States—the two largest borrowers in Europe—France and Spain, became bankrupt soon after the middle of the sixteenth century, and England was very near the same condition. During the early years of Elizabeth's reign, the great bankers who had lent most to Philip were collapsing in every direction. State finance was ruining the Antwerp money-market. Its only chance of a prosperous future lay in the maintenance and development of the system of private mercantile credit, upon which the international trade of the period so largely rested. And it is in their effects upon that system that Gresham's exploits in connection with the foreign exchanges find their real significance.

The dependence of national finance, and of the larger forms of industry and commerce, upon international credit, which we regard as the distinguishing characteristic of modern economic civilization, was also an important factor in the economic development of Europe in the sixteenth century, and was a very real, if less important, factor in the fourteenth. The difference, in this respect, between our own time and earlier ages is threefold. It consists, first of all, in the degree of dependence, which of course has greatly increased with each century; secondly, in the recognition of that dependence and consequent respect for international credit; and, thirdly, in the intelligent appreciation of the conditions that make international credit possible. The ambitious schemes of Edward III depended on international credit, but, in his lack of respect for it, he recklessly destroyed one after another of the credit bases on which not only his own campaigns, but the industry and commerce of his people rested.

Elizabeth's ministers had a very real respect for credit, and, if they had not, it would not have been the fault of Gresham's teaching. The constant refrain of his letters from Antwerp is the necessity of keeping up the Queen's good name with the magnates of international finance. He glories in the fact that her credit is better than that of Philip or the French

king, and it is solely for the purpose of maintaining it that he recommends the forced loans from the Adventurers. But he recognizes clearly that the elasticity of this final resource depends on prompt payment. If the Queen will only repay her merchants regularly, she may rely upon them, in any difficulty, for a loan of £40,000 or £50,000

It is not, indeed, so much in respect for credit, as in intelligent appreciation of the essential conditions on which it is based, that Gresham, in common with the wisest of his contemporaries, is wanting. And, even here, he had made considerable advances over the more orthodox views of his time. To the expert in currency, like Gerard Malynes, the only natural and equitable exchange was that at mint-par, ounce for ounce, that is to say, of the precious metals, *minus* a fixed commission for the exchanger, who ought to be a State functionary. The fluctuations of the rate offered by the private exchanger represented to his mind a fraudulent gain, and this gain, moreover, was usually combined with the giving and taking of interest, an equally immoral transaction.³⁸ Now, whatever nonsense Gresham may have talked to the less initiated, whatever feats he may have attempted by cornering the exchange, he fully realized that both the exchanges and the taking of interest were necessary and normal incidents of commerce. "The merchants can no more be without exchanges and recharges than the ships in the sea can be without water." So Gresham's father, Richard Gresham, had told Thomas Cromwell, when it was proposed in 1538 to restrict the exchanges.³⁹ And, in like manner, Thomas Gresham urges Cecil in 1560 never to consent to the banishing of the exchange, as it would cause all the fine gold and silver to be transported out of the realm. But, he adds, "the money merchants are not to be allowed to lower the exchange by their greediness."⁴⁰ In short, the exchanges were to be tolerated as long as they remained at rates favourable to England, as they were at that moment, owing entirely, as Sir Thomas thought, to his own exertions.

We are now prepared to consider the effect of Gresham's exploits in connection with the Merchant Adventurers in the dry light of science, stripped of the romantic halo with which he has contrived to surround them. Gresham advised the Government to raise a forced loan from the Adventurers. The Government owed large sums to bankers in Antwerp in the form of short loans, which had to be renewed yearly or oftener. As the sources of their credit were failing, the bankers were unable or unwilling to renew the loans, and the Government was obliged to look for other lenders in order to meet its engagements. The most convenient victims of a forced loan were the Merchant Adventurers. Twice a year they made a large shipment to Antwerp, which was sometimes valued at as much as £300,000. Whilst this ready money was still in their hands,

³⁸ G. Malynes, *Lex Mercatoria*, 1622, Part III, *passim*.

³⁹ Schanz, *Englische Handelspolitik*, 1881, vol. II, p. 633.

⁴⁰ S.P.F., 1560-1, no. 84 (May 12, 1560).

what was more natural than that they should be requested to lend a tenth of it to their sovereign in distress? And, as no strong pressure could be put upon them when they were on foreign soil, it might be thought desirable to seize the shipment before it sailed and exact a promise before releasing it. Forceable measures of this kind, however, are recorded only on two occasions—in 1553 and again in 1559⁴¹—whilst loans obtained by negotiation and moral pressure were almost a regular feature of government finance in the period between 1553 and 1561, and the Staplers⁴² were drawn into requisition as well as the Adventurers, though for lesser sums.

But Gresham's special device consisted in the connection of the loan with the exchanges. The money borrowed was to be used to pay off foreign debt, and, the higher the rate of exchange on London in Antwerp, the less the Government would have to pay there. The arrival of the Adventurers' cloth fleet raised the rate of exchange, by causing a demand for bills on England to pay for the cloth. Gresham proposed that the Government should gain by the rise in paying off its debt. The Queen should say to the Adventurers: You have promised to lend me £30,000 here in London. But you will shortly be obliged to transmit more than £30,000 from Antwerp to London at, say, 25s. Flemish to the pound (then a very high rate of exchange). Instead of wasting the money by the high exchange, you shall use it to pay my creditors. For every 25s. Flemish you pay for me in Antwerp, I will owe you 20s. in London.⁴³

Apart from the merchants' willingness to lend the money, the fairness of this offer depends on two points. It presupposes, first, that the merchants would have been obliged, unless they paid the Government's debt, to transmit their money to England; and, secondly, that the high rate of exchange predicted would be reached. But neither of these suppositions was true. It was the merchants' business to adapt their transactions to a momentary rise of the exchange, so as not to suffer by it. And, moreover, Gresham and the Queen invariably tried to base the bargain on a much higher rate of exchange than could be reasonably expected, or than was, in fact, subsequently realized. Only once, however, as far as I know—on the occasion of the first forcible seizure—did they secure the acceptance of their predicted rate of exchange as the basis of the bargain. On all the other occasions the Merchant Adventurers, whilst submitting to the loan, succeeded in insisting upon a really current rate of exchange. Gresham's achievement, therefore, when reduced to its actual proportions, comes to no more than this—that, at a time when international credit was failing, he secured by strong pressure a series of forced loans from national sources, and that the first of the series was obtained by violence on grossly unfavourable terms.

⁴¹ See above, pp. 235, 237.

⁴² See, e.g., *Acts of P.C.*, vol. III, p. 267 (May 5, 1553), and Burgon, *op. cit.*, vol. I, pp. 334, 353, 489.

⁴³ Burgon, *op. cit.*, vol. I, pp. 257-61.

The question how far his action was justifiable at the moment I leave to the political historian. But we may ask the simple questions—Did it really restore the Queen's credit? and, What was the effect of the policy on trade?

The last of the series of loans by the Adventurers and Staplers was made in August 1561, and amounted to £30,000.⁴⁴ The Adventurers made the advance with the greatest reluctance, pointing out that £10,000 of the last loan was still unpaid. At the same time, Gresham was dunning the Government for the arrears of his own small account, and was complaining of the same sharp practice in regard to the rate of exchange which he had recommended in the case of the Adventurers. It is only fair to Gresham to say that he never ceased to urge the Government to repay its loans to the merchants, so as to maintain its credit. But, when the following autumn arrived, the whole of the loan of 1561 still remained unpaid. Doubts are now cast, says Gresham, on the Queen's credit, "and glad is that man that may be quit of an Englishman's bill." The resources of the international market were also at an end. The great firm of Fugger replied to an application of Gresham that they had better bestowed their money. "These money men," said Sir Thomas, "are afraid to deal any further with the Queen, being in doubt of this troublesome world."⁴⁵ Next autumn we hear that the Fugger have temporarily suspended payments, and that another great firm is paying 10s. in the pound.⁴⁶ It was in these years, 1561-3, that the Queen's credit sank lowest, with the result that she was obliged to draw upon her capital. Crown lands were sold to the amount of £170,000.⁴⁷ Gresham's forced loans may have conceivably stayed off bankruptcy. They certainly did not restore the Queen's credit; on the contrary, they served to dry up its last remaining source.

If we ask what were the consequences of the financial policy of Gresham for English foreign trade, we find ourselves led into wider considerations, and to later events that belong to my next lecture. But I may venture, in conclusion, to enumerate briefly those consequences which have emerged already. The first is the suspension of the Hanseatic trade. Gresham contemplated its complete exclusion, and he set in motion forces that, in the end, produced this result. The second is the limitation of the membership of the Merchant Adventurers' Company. The effect of these two consequences combined was to turn the central portion of English foreign trade into a very narrow channel for the purposes of Government manipulation. But a third consequence, which is less obvious, is, perhaps, even more important. In tampering with the foreign exchanges, whether by temporary suspension or by violent manipulation, Gresham was un-

⁴⁴ *Ibid.*, pp. 395, 489.

⁴⁵ *S.P.F.*, Aug. 16, 1562 (no. 485).

⁴⁶ *Ibid.*, Oct. 3, 1563 (no. 1263).

⁴⁷ W. R. Scott, *The Constitution and Finance of Joint-Stock Companies*, vol. I, p. 33.

consciously checking, to a disastrous extent, the sensitive life and growth of a new agency, upon which depended the whole future expansion of industry and commerce, the agency of banking and international credit.

III. The effect of the chartered companies on commercial development

In my last lecture I attempted to show that the Merchant Adventurers' Company did not in any lasting sense restore the credit of the Government. Still less did it assist Gresham to perform those miraculous feats upon the exchange of which he has claimed—and been very generally accorded—the credit. But did not the Company at any rate serve as the chief instrument of the Government's mercantilist policy? Was it not the leading organ of the expansion of English commerce in a most momentous epoch? I propose in this lecture to consider these questions, with especial reference to that central portion of Elizabeth's reign which lies between 1564 and the year of the Spanish Armada.

There is, for our purpose, a certain unity in the period. It leads up to the final breach of England with the Hanseatic League. This happened in the year before the Armada, and, in the year after, English privateers were preying upon Hanseatic commerce on the pretext that the Hanse towns were aiding Spain. To the patriotic mind it might naturally seem as if the victory of the Armada carried with it the future supremacy of English over German trade. A view something like this is embodied in the phrase of Dr. Lingelbach, "They won English trade from the foreigner."⁴⁸ We must, however, deliberately suppress our natural feelings about the Armada, and confine ourselves to the plain questions: Had the Government any consistent line of commercial policy? Were the Merchant Adventurers the instrument of that policy? Was English trade expanding in these years? Were the Merchant Adventurers the organs of the expansion?

If they were, they certainly builded better than they knew. Their professed policy was of a directly contrary kind. It aimed (1) at limiting the number of the Company's members, (2) at confining the active trade to a small minority of the members, and (3) at restricting the amount of trade done by each of the favoured minority. Before we go further, it will be well to recall the main facts of the Company's history, in so far as they bear on its composition and the extent of its membership. The earlier charters, whether of foreign or English princes, down to the middle of the fifteenth century, were not granted to the Company as such, but to the merchants of England trading beyond the seas in general, and the privileges thus conferred were shared by merchants from other ports as well as from London. It is extremely probable, however, that the

⁴⁸ See above, p. 224.

body which took the initiative in procuring the charters was a group of London merchants trading at Antwerp or Bruges, who were bound together in a fraternity dedicated to St. Thomas à Becket, and who, in the course of the fifteenth century, acquired property and built a gildhouse and chapel, first at Bruges and Middelburg, and then at Antwerp. In the early days they admitted other English merchants to their fraternity, or, at any rate, to the exercise of trade under the charter, on fairly easy terms, but later, as the expenses of their establishment grew, they raised their entrance fees. In 1497 a number of merchants, mostly from provincial ports, complained to Parliament that they were excluded by these arrangements from a share in England's best foreign market.

According to law and treaty, and also to the charters, they were perfectly free to buy and sell in the marts of the Netherlands. But, in fact, the gild of Londoners had contrived to acquire such a control of the trade that no Englishman could share in it till he had paid the entrance fee imposed upon him. The amount of this fee, devoted nominally to the religious purposes of their fraternity, had originally been only three shillings and fourpence, but later it was raised, first to a hundred shillings Flemish, and then to twenty pounds. The result was that the majority of younger merchants, especially those in the provincial ports, were shut out from direct trade with the Netherlands, and were obliged to deal through the agency of the members of the gild, with the result that the market for English cloth was restricted and that the price of all imported goods was raised.⁴⁹

Parliament responded to their appeal by declaring that every Englishman was free to trade in the Netherlands, without paying any more than ten marks to the use of the gild. The effect of this Act was to admit by implication the right of the gild to control the trade and to impose entrance fees. It thus gave a legal sanction to what had previously been merely the acts of a private association. The Act did not oblige the gild to confer full membership for the payment of ten marks, but only the right to trade. Those who were admitted under the terms of the Act were called the members of the New Hanse, whilst the original members, and those who succeeded to their rights, were called the Old Hanse, and it was the latter who controlled the policy of the Company and who fully enjoyed its privileges. Nevertheless, the admission of the new members does appear to have widened the structure of the Company. The merchants of the provincial ports attained a recognized position in the organization. The governing body was the court at Antwerp—the headquarters of the Adventurers beyond the sea—and here the Governor and Assistants were elected; but there were lesser courts at other foreign marts, as well as, in England, at London and, probably, at other ports. The court at London itself was subordinate to that at Antwerp, but the London merchants

⁴⁹ M. Sellers, *The York Mercers and Merchant Adventurers* (Surtees Soc., vol. CXXIX, 1918), pp. xliv–xlvi, and 12 Hen. VII, c. 6 (Preamble).

controlled the court at Antwerp, either in person or through their factors and apprentices

The next clear picture which we get of the internal affairs of the Company is at the moment of the crisis in 1553. Gresham wrote to Northumberland to say that his scheme for making use of the Adventurers as a financial resource would not work, unless the admission of fresh members through the New Hanse were stopped. "For verily," he says, "they have been and is one of the chiefest occasions of the falling of the exchange. . . So, and please your Grace, how is it possible that either a minstrel-player or a shoemaker, or any craftsman . . . have . . . understanding of thefeat of the Merchant Adventurers?"⁵⁰ We learn from other sources that the members admitted to the New Hanse had been demanding equality with the Old Hanse, and that the Privy Council, in pursuance of Gresham's advice, not only disallowed their claims, but imprisoned the ringleaders in the Fleet till they submitted to the Company.⁵¹

In 1564 the Company obtained their charter, which, for the first time, gave a legal basis to their monopoly of the Netherlands trade, so far as royal charter could bestow such a privilege. The grant was, in fact, regarded as unconstitutional by the opponents of the Company, whilst, on the side of the Government, it was afterwards held to be a most important precedent for the establishment of further monopolies. It was natural that a further struggle should occur as to the right of entry into the trade. In December 1566 two Bills were introduced into Parliament. The Company proposed to repeal the Act of 1497, and thus to deprive the New Hanse of their chief weapon. The outsiders and New Hanse proposed to enact new penalties on the Company, for neglecting to admit members as prescribed by the Act. They declared that subjects of the Realm, trading upon warrant of the said Act, had been grievously fined and imprisoned and their goods detained, until they paid, some a hundred marks, others a hundred pounds, and further had been enforced to enter into bonds of five or six hundred marks, to the intent they should not enjoy the freedom.

These hostile proposals cancelled each other, and the Old Hanse remained in possession of the field. The device alluded to, of binding those who had acquired a nominal freedom not to make use of it, had been practised two centuries earlier in the greater London gilds. Another gild device was adopted by the Adventurers to secure some measure of equality between those members who actually enjoyed the privileges of trade. This was known as the "stint." An apprentice having licence to trade for himself (as he had in the last year of his apprenticeship) might ship out 100 cloths, a freeman in his first, second and third years 400 cloths, in his fourth year 450, in his fifth 500, and so on. In his fifteenth year he might ship 1000. This was the maximum. And, in the same way,

⁵⁰ Burgon, *Life of Gresham*, vol I, p. 463.

⁵¹ *Acts of P C*, vol IV, pp 279-81 (May 30, 1553).

as his seniority increased, he might enjoy an increasing share in the free licence held by the Company for the export of unfinished cloth, its most valued monopoly.⁵²

These restrictive methods were, indeed, frankly avowed by the Company, who argued for their necessity on the accepted grounds of the current philosophy of trade. If there were too many sellers of English cloth, then competition for the foreigners' custom would lower the price. If there were too many buyers of foreign wares, then competition would raise the price. These arguments rest on what seems to us an astounding assumption—that the foreign market was strictly limited, on the side both of demand and of supply. The fact that this assumption was generally allowed to pass in the sixteenth century supplies an explanation to much which would otherwise be mysterious in the economic history of the time. Economic progress—commercial and industrial expansion—could only be realized by those who denied this assumption. It was denied *in fact* by the numerous interlopers who opened new markets in defiance of the Company. It was denied *in theory* by those Members of Parliament who drew up the Report on the Free Trade Bill of 1604. "When trade is free, it is likely that many young men will seek out new places." "When traffic shall flourish . . . things merchantable will increase daily"⁵³ In 1604 these were not truisms, but Copernican discoveries. We need not, therefore, suspect a seventeenth-century critic of the Company of making a serious under-estimate when he says that, whilst the normal membership of the Merchant Adventurers amounted to three or four thousand, the whole of the trade had come to be managed by forty or fifty persons.

The question, therefore, whether the Merchant Adventurers were an organ for the expansion of English trade must clearly be answered in the negative, if we confine our view to the activities of the original Company. But other bodies of Merchant Adventurers were continually coming into existence during the reign of Elizabeth, and, in the third decade of the reign, a large part of the interest of commercial history is transferred to these companies, in the foundation of which the members of the original Company had no inconsiderable share. May we not look to them for the secret of development?

At first sight it seems natural to regard a growth of organization, such as we meet with in the sixteenth century, as a clear and unmistakable sign of the expansion of trade. When we find, within the short space of a dozen years, new chartered corporations of Merchant Adventurers springing up at one provincial port after another, at Newcastle in 1547, at Chester in 1553, at Exeter in 1557, at Bristol in 1566, at York in 1578, our first thought is that a new era of prosperity is opening for these ports, and that fresh capital and fresh enterprise are flowing in to open up their resources. So, too, when we find, some twenty years later, a succession

⁵² Lingelbach, *The Merchant Adventurers of England: Their Laws and Ordinances*, p. 68.

⁵³ Commons' Journals, vol I, p. 219.

of new national companies formed at London, each devoting itself to a separate field of foreign trade—a Spanish Company, a French Company, an Eastland Company, a Levant Company, a Senegal Company—it seems natural to connect these new corporations with that pioneering energy of the Elizabethans of which we have all heard so much. The English merchant is no longer content with timid ventures across the Channel; he is, at last, venturing boldly into the Baltic and the Mediterranean. New fields of commerce are being opened to English enterprise and capital. The foundations of British commercial supremacy are being laid.

But our ardour is suddenly quenched if we turn to read the charters, either of the provincial adventurers or of the new national companies. We find in them little or nothing about expansion, and a great deal about restriction and vested interests. Indeed, and it may be said, I think, without exaggeration, that the one common feature which characterizes the whole of the charters is the express desire to exclude retailers and craftsmen from engaging in foreign trade. A few months after Gresham had written to Northumberland, asking that no more members of the New Hanse should be admitted to the Merchant Adventurers, on the ground that they were likely to be shoemakers or minstrel players, the merchants of Chester obtained a charter as "mere merchants," for the purpose of preventing retailers from engaging in wholesale export trade. A charter applied for by the Exeter merchants, at the accession of Elizabeth, was drawn up in the same sense, and led to serious conflict in the town. A sermon is extant, preached before the mayor by a local divine, in which the presumptuous ambitions of the craftsmen are compared with Adam's appetite for the forbidden fruit and with the rebellious spirit of Korah, Dathan and Abiram. In 1566 the Bristol Merchant Adventurers procured the passing of a Private Act excluding retailers, but at the next Parliament, in 1571, the city expressly charged its two members to procure a repeal, which was accordingly done.⁵⁴

The matter at stake in these cases was no light one. A sharp division between merchant and craftsman had been one of the main hindrances to the progress of commerce in Scottish burghs, but it had never been a part of the best civic tradition of England. London had been specially free from it. Those who have had the pleasure of seeing Dekker's delightful play, *The Shoemaker's Holiday*, will remember that the shoemaker rose to fortune, and became a sheriff, through the speculative purchase of a salvaged cargo. Whatever element of humorous exaggeration there may be in this, it reveals the secret of the commercial prosperity of London. If we wish to see the evil effects of the opposite principle, we have but to turn to the records of the Merchant Adventurers' Company of Newcastle in the first half of the sixteenth century. A craftsman was not allowed to import or export a cargo for himself. A skipper or a merchant was

⁵⁴ Private Acts, 8 Eliz. & 13 Eliz. See also *S.P.D. Eliz.*, vol. LXXVII, no. 35 (March 28, 1571), and Addit., vol. XX, no. 19 (April 12, 1571).

forbidden to act as his agent. A skipper might not act in partnership with a merchant. Such restrictions were fatal to the growth of capital in commerce.

What, therefore, we found to be true of the general body of Merchant Adventurers is true also of the local companies which were being formed at the beginning of Elizabeth's reign. They were certainly not organs of an expanding commerce. Where expansion was taking place, it found expression in resistance to the monopoly claimed by the companies.

When we come to deal with the new great national companies, we shall find the same truth applies to them. We may set aside the question about expansion, and turn to the other question—How far were the Merchant Adventurers the organ or instrument of a consistent policy adopted by the Government? The study of the rise of the new national companies out of, or in connection with, the Merchant Adventurers will, I think, help us to some sort of answer to that question. But the rise of these new companies belongs to the third decade of the reign. We have hitherto been dealing with the first decade. In the second decade of the reign—from 1568 to 1578—two new influences began to play a predominant part in commercial history, and we cannot, therefore, go on with our story before giving some account of them. These were the influences of joint-stock enterprise and of treasure-seeking. To a very large extent these two influences were identical.

The earliest of the great joint-stock companies, which ultimately became the Russia Company, is a partial exception to the rule. But Russia was never meant to be more than a stage on the journey. The Company's original title was "The Merchant Adventurers of England for the discovery of lands, territories, isles, dominions and seignories unknown,"⁵⁵ and its final aim was the wealth of the Indies and Cathay, and the fabled mines of Golconda. Frobisher's first voyage, in 1576, set out for the same goal by the north-west route; his second and third voyages were boomed by a bogus discovery of gold ore in Newfoundland; and his final voyage turned aside to the more certain allurements of the Gold Coast and of the Spanish Main.⁵⁶ The African Companies made gold-dust their first object, and fell back on the slave trade as a lucrative second best.⁵⁷ The Company of Mines Royal was founded in 1564 in the hope that gold and silver might be discovered in the soil of England itself,⁵⁸ and the decision of the judges in 1567, dispossessing the Earl of Northumberland of his mining right in favour of the Crown,⁵⁹ may have been one of the causes of the Northern Rising.

But the most lucrative of these enterprises belong to a class whose complete records, for excellent reasons, will never see the light—the joint-stock companies of privateers, whose operations began very shortly after the accession of Elizabeth, and whose exploits, however gratifying

⁵⁵ W. R. Scott, *Joint-Stock Companies*, vol. II, p. 37.

⁵⁷ *Ibid.*, pp. 3 seq.

⁵⁸ *Ibid.*, p. 384.

⁵⁶ *Ibid.*, pp. 76-82.

⁵⁹ *Ibid.*, pp. 385-6.

to the receivers of dividends, rendered the ocean unsafe for unarmed commerce during long periods of the reign. The supreme, as well as the best-known, instance of this form of international highway robbery was the capture by Drake, in 1579, of what is supposed to have been over a quarter of the whole produce of the Spanish mines, a sum amounting to over £600,000 Of this amount a quarter of a million is said to have gone into the Queen's treasury, whilst another quarter of a million was divided among the shareholders, making a dividend, according to one tradition, of 4700 per cent.⁶⁰

We are not here concerned with the morality of this form of enterprise, or with any justification which it may claim on the ground of political necessity or of the example of other nations, but simply with its effects upon the prosperity of commerce. There can be no doubt that these were extremely prejudicial. This may seem a hard saying; yet the weight both of fact and of argument is overwhelmingly opposed to the assumption that the exploits of the Elizabethan freebooters favoured the expansion of English trade. Very simple facts show that this was not the case; and very elementary arguments prove that it could not have been the case.

Let the facts come first, as the more cogent. English privateering not only acted continually as a positive hindrance to foreign trade, but on at least three occasions was the main cause of a complete stoppage of the greater part of it, and thus brought about three severe crises both in trade and in industry

On the first of these occasions, the stoppage of trade in 1564 between England and the Netherlands, there were other contributory causes—notably the Navigation Act and the other legislation of 1563 directed against the commerce of the Netherlands⁶¹—but matters were brought to a head by piracy practised in the Channel by English ships. The stoppage lasted a year, and the breach with the Netherlands was never really healed. The Merchant Adventurers, driven from Antwerp, tried to establish their staple at Emden in Friesland, but, finding a very inadequate sale there, were obliged to carry their wares to Cologne and Frankfurt. It is significant that it was in the midst of this crisis that the Adventurers received their charter, and obtained confirmation of that licence for the export of 30,000 white cloths which constituted their monopoly.

The second crisis⁶² arose in December 1568, directly out of the seizure of the Spanish bullion, which had taken refuge from privateers in Plymouth harbour; but this entirely indefensible act of the Government was only the last straw. A year earlier, the Spanish Ambassador had complained of outrages from English privateers without remedy and without end. In January 1569 the goods of the Adventurers and Staplers

⁶⁰ Scott, *op. cit.*, vol. I, pp. 78-82.

⁶¹ 5 Eliz., c. 5 (Navigation Act) and c. 7 (Act for avoiding of divers foreign wares made by handicraftsmen beyond the seas).

⁶² For this crisis, see Scott, *op. cit.*, vol. I, pp. 49-52.

in the Low Countries, and of the English merchants in Spain, were seized to the value of nearly £200,000, and reprisals were made on the goods of Spanish merchants in England. Contemporary chroniclers boast, very much in the spirit of the modern Yellow Press, that the English haul was bigger than the Spanish. But, as Dr. Scott very justly points out, this, if true, was a poor consolation for the stoppage of trade for several years with England's two best markets, the Netherlands and Spain, neither of which was completely recovered during Elizabeth's reign. Of the third crisis, that of 1587, I hope to speak in my next lecture.

To pass from facts to arguments. A very little reasoning will suffice, I think, to show that the influences prevalent in an age of treasure-seeking are not favourable to the expansion of ordinary commerce. In the first place, it will be clear that, in the universal passion for speculation fed by the hope of such prizes as Drake's, much capital would be diverted from the channels of healthier enterprise; and a great part of this was lost. We might, perhaps, console ourselves with the thought that the capital so wasted would not in any case have found its way into productive enterprise, if we did not know that the nobles and gentry of Elizabeth's time were ready enough to invest their capital in industry and commerce when they saw a fair chance of gain. But still more conclusive evidence is available. We find the Privy Council actually writing to the Lord Mayor in 1577,⁶³ telling him to put pressure on reluctant London merchants to subscribe to Frobisher's expeditions (in which some £20,000 were lost⁶⁴), and to suppress the lewd speeches of those who cast doubt on the genuineness of the bogus gold ore. And, as a matter of fact, the leading merchants in the trading companies are found also amongst the leading subscribers to the mining ventures and to the African and American voyages, and were no doubt largely interested in joint-stock privateering.

Still stronger, I think, are the arguments that relate to the influence of treasure-seeking on credit. In our own time new gold discoveries, though they almost invariably devour more speculative capital than they return, may stimulate, even over-stimulate, credit. The sixteenth-century discoveries had, indeed, a strong tendency to do this. But, as I tried to show in my account of the development of international credit, the gold hunt of the freebooters more than counteracted this tendency. It struck a fatal blow at the very heart of credit. It made international banking and finance all but impossible. When faced with this result, the Government recoiled. After seizing the Spanish bullion in 1568, and causing a crisis which dislocated commerce and industry for several years, Elizabeth had, in the end, to acknowledge the sum as a loan from the Genoese bankers to whom it belonged.⁶⁵

This direct and immediate effect upon credit of the Plymouth seizure in

⁶³ *Acts of P C*, vol. X, p. 71 (Aug. 4, 1577).

⁶⁴ See *sibid.*, p. 415 (Dec. 7, 1578).

⁶⁵ W. R. Scott, *op. cit.*, vol. I, p. 64.

1568, and of Drake's later capture, is obvious enough. It was as if—to use a modern parallel—the Germans were to loot the Bank of England. There were, however, indirect effects upon credit of the preoccupation of the Government and the nation with bullion, which, as they were less obvious, were more insidious at the time, and which have a greater claim on the attention of the student.

To put it briefly, the practical preoccupation with bullion produced a reaction to the bullionist theory, from the trammels of which commerce and industry had seemed on the point of escaping. Paradoxical as it seems, it is a natural psychological phenomenon, that the nations who had the nearest access to the gold and silver supply had also the least liberal bullion laws. When millions were flowing into his coffers, the Spaniard begrimed every ducat exported by the foreigner. Gresham has given us a lively account of how he was mobbed in Spain, when he went, as Queen Mary's agent, to bring over some bullion with the sanction of her husband Philip.⁶⁶ So, too, in England, when the buccaneers had begun to discover gold mines on the high seas, when the African adventurers brought gold dust from the Guinea coast, when hopes were still high that the Frobisher cargoes of Newfoundland ballast contained a high percentage of the precious metals, all the old devices by which the flow of bullion had been restricted were revived. With an immediate booty of bullion for ever before its mind, the nation no longer trusted the silent but irresistible agencies of international trade and international credit, by which the flow of bullion was maintained towards a lower level. And, in its eagerness to retain the ill-gotten store of gold and silver, it hindered the agencies that kept up a regular supply. It grasped at the shadow—bullion—and dropped the substance—credit.

The reactionary spirit showed itself in the restrictions that were attempted upon the exchanges. When the exchanges were favourable to England there was little temptation to interfere with them, and in the earlier period, when the flow of bullion was through Antwerp, the exchanges with the Low Countries were normally favourable. In 1575, at the time when the illicit gains of privateering were at their height, we hear a complaint that bullion is being exported from England through the Low Countries to the East. This outflow of the excess of bullion, to find a lower level and a better market elsewhere, was an inevitable and desirable thing, but a cry was raised that England was being robbed of its hard-earned treasure, and a scheme was proposed for preventing it. This involved Government control and taxation of the exchange. The foreigners, who exported the bullion, did so secretly, and the only way of discovering their operations, it was thought, was to keep a register of all the operations of international credit through the exchange—in short, to inspect every merchant's banking account. A tax of $1\frac{1}{2}d.$ in the pound

⁶⁶ Gresham to the Council, Nov. 30, 1554 (*S P F*, 1553-8, no. 297)

was proposed on all exchange transactions.⁶⁷ This would cover the cost of the register, contribute a kind of stamp duty to the Government, and act as a discouragement to exchange business.

The scheme was adopted by the Government; but the merchants, both native and alien, at once declared that, if it were persisted in, it would be utterly ruinous to commerce.⁶⁸ The foreign exchanges, said the native merchants, were not an occasional and abnormal expedient, but were a regular part of the daily life of commerce. The exchangers performed the same functions as the modern banker—they multiplied the utility of capital. With their assistance, a merchant might turn over his capital four or five times as fast as he could have done without it. If the same portion of capital were turned over twenty times a year through entries in the exchanger's book, it would have paid, by the scheme proposed, a tax of fifty per cent. The protest of the alien merchants casts light in another direction. We could not, they said, do one-hundredth part of our present trade if we did not give several months' credit to our English customers, and the whole basis of this credit rests on the freedom of the exchanges. A tax would kill it at once.

How long this disastrous policy was persisted in I do not know, but the mere fact of its having been attempted makes it clear that, in the second decade of Elizabeth's reign, there were powerful influences in operation, distinctly adverse to the expansion of legitimate commerce and favourable to its restriction. The unsafety of the high seas raised freights, hindered small enterprise, necessitated Government protection, justified a system of licences, and so led on to restriction and monopoly. The seizure of the bullion fleets not only led to long stoppages of trade, but weakened the material basis of international credit. The preoccupation with bullion, and the fear of losing ill-gotten gains, produced, in fact, an attack on the institution of credit, and credit, then as now, was the main resource of the enterprising beginner in commerce. Such were the unfavourable conditions under which the third decade of Elizabeth opened and a new epoch of company formation began.

The history of the formation of the Company of Merchants trading to Spain and Portugal is of peculiar interest. In the Privy Council Register and the Calendar of State Papers we can trace both causes and results with complete clearness. Before the stoppage caused by the bullion seizure in 1568, Spain had been one of the best markets for English cloth, for English corn in good years, and for Irish hides and other produce. The traders in provincial ports—Ipswich, Bristol, Chester and Exeter—who were excluded by the London Adventurers from the Netherlands trade, found in Spain an open field for their enterprise. At the time of the stoppage, no less than £58,000 worth of English merchants' goods were found in Spanish ports. For six years this valuable trade was almost

⁶⁷ R. R. Steele, *Proclamations of the Tudor and Stuart Sovereigns*, 1910, vol. I, no. 707.

⁶⁸ Schanz, *Englische Handelspolitik*, vol. II, pp. 642-7.

suspended, and the little that was carried on, apart from smuggling and privateering, required a special licence from the Government.

Scarcely had trade begun to revive, after the settlement with Spain of 1574, when the evil influences of the period of restriction manifested themselves in proposals for confining the trade to a special company.⁶⁹ The scheme, it is to be observed, was put forward by some of the members of the Merchant Adventurers, who had been led to reflect, in the time of restraint, on the many inconveniences caused by the lack of order in the Spanish trade, and who now proposed that it should be controlled by the establishment of a supplementary company on similar lines to the Merchant Adventurers.⁷⁰ The ordinary membership was to be confined to those who had been engaged in the trade before the stoppage, including the merchants at the provincial ports. Special branches were to be formed at Bristol, Exeter and Chester, in connection with the local companies of Merchant Adventurers. Those who had not been engaged in that branch of commerce before 1568 could only be admitted as redemptioners, on payment of a heavy entrance fee; but twenty-four members of the Merchant Adventurers' Company were admitted on special terms.⁷¹ No craftsman or retailer was to be admitted at all.

The new Company's troubles began as soon as it was formed. Those who were already in the trade refused to abandon it.⁷² They were arrested by the Company, on the authority of the letters patent of the Crown; but they applied for writs of *habeas corpus*, which the Judges did not feel able to withhold. The Privy Council, which, only a few weeks before, had been bullying the merchants of London into subscribing to Frobisher's mining adventure to Newfoundland,⁷³ wrote instructing the Judges that they were not to issue writs of *habeas corpus* for the benefit of the free traders.⁷⁴ In Bristol and Chester the old conflict between craftsmen, retailers and wholesale merchants, which had been happily settled by the admission of some of the excluded classes, was revived by the restrictive clauses of the new Company's regulations. The "mere merchants" of Chester complained to the Council that the artificers and craftsmen had risen against the regulations, and that they had received liberty from the mayor to do as they liked.⁷⁵

Similar conflicts were raging in London, where they were complicated by the fact that the Government had begun to confer monopolies upon the various branches of retail trade. The Vintners' Company had, some time before, formed a trust, and had secured from the Government a

⁶⁹ *S.P.D. Eliz.*, vol. XCIX, no. 8 (Nov. 1574)

⁷⁰ *Ibid.*, Addenda, vol. XXIV, no. 94 (Oct. 25, 1576)

⁷¹ *Acts of P.C.*, vol. X, pp. 330-1 (Apr. 22, 1577).

⁷² *Ibid.*, p. 282 (Feb. 3, 1577)

⁷³ See above, p. 256

⁷⁴ *Acts of P.C.*, vol. X, pp. 37-8 (Sept. 25, 1577)

⁷⁵ See e.g. for Bristol, *ibid.*, pp. 408-9 (Dec. 2, 1578), and for Chester, *S.P.D. Eliz.*, vol. CXXIX, no. 53 (Feb. 1579), and Addenda, vols. XXV, no. 77, and XXVI, no. 6 (Feb. 1578 and Feb. 1579)

monopoly in the retailing of wine. The trust seems to have controlled the French wine trade on its own account, and to have raised prices so high in London that the Privy Council was driven to send a warning through the Lord Mayor.⁷⁶ The Vintners' monopoly now refused to offer the Spanish monopoly what the latter considered a reasonable price for Spanish and Portuguese wines, and the Privy Council was obliged to solve the conflict of vested interests, which it had itself called into existence, by authorizing the Spanish merchants to retail their own cargoes.⁷⁷ At the same time, the Council issued a grave warning to the Spanish Company. It had been informed that the commodities imported by them—wine, oil and especially fruit—were sold at a very high price. The merchants about to set out for Spain were to be informed that, unless the prices on their next cargoes were abated, the Government would feel it necessary to fix a tariff of prices for the protection of the public⁷⁸

If the merchants had ventured to reply to this mandate, we can gather from other entries on the records what their defence would have been. "The rise in prices," they would have said, "is due to the new conditions under which the trade is carried on. We have paid (as we may be sure they had) a good round sum for the monopoly Our freights are raised by the use of large ships, which we are compelled to employ in the interests of the navy, and by the cost of an expensive convoy which you oblige us to accept." "And moreover," they might have added a year later, "you are now still further helping to raise prices by forbidding us to bring anything in exchange for corn but bullion, salt and oranges."

As soon as the Spanish Company was well under way, a movement was set afoot by the London merchants for dealing in a similar way with the Baltic trade. This trade, like the trade to Spain, had hitherto been open to all Englishmen, and had been as great a resource to the free traders of the east coast as the Spanish trade had been to those of the south and west. It was henceforward to be restricted to the members of a new corporation—the Eastland Company. The parallelism with the case of the Spanish Company was very marked. The justification for the formation of the company was found in the prevalence of privateering. The Danish Government having threatened reprisals for piracy committed by English ships, it was found desirable to collect an indemnity, in order to pacify the victim and to provide for the protection of English traders. The provincial ports on the east coast were to participate in the new company, but only those merchants were to be admitted who had traded to the Baltic before 1568. In the first draft of the charter it was proposed to exclude all those who were members of the other national companies, but the Spanish Company and the Merchant Adventurers protested, and,

⁷⁶ *Acts of PC*, vol IX, p 261 (Jan. 2, 1577)

⁷⁷ *Ibid.*, vol XI, pp 260-1, and 299 (Sept 11 and Nov 6, 1579).

⁷⁸ *Ibid.*, pp 137-8 (May 24, 1579)

in the end, it was made easy for a great London merchant to belong to all three companies.⁷⁹

The effect of the formation of these two companies, the Spanish Company in 1577 and the Eastland Company in 1578, was that two additional spheres of trade had been drawn under the regulation and control of organizations closely modelled on that of the Merchant Adventurers' Company, and dominated by past or present members of that company, and that these important spheres of trade were henceforth legally closed to the free enterprise of expanding commerce. Similar influences, we may take it for granted, were at work in the formation about this time of separate companies for the French trade, for the trade with Barbary and for the trade with Venice.

We may now revert to our first question—Was there a policy behind this movement? The answer will depend on our use of the word "policy." The companies were clearly not the creation of policy in the sense of a deliberate, consistent and far-sighted scheme. The two main factors in their formation were the reckless opportunism of privateering and the interests of groups of London merchants. But policy, in the sense I have just defined it, is more often an illusion of the scholarly mind than a fact of history. Policy, as actually found in history, is a set of devices into which a Government drifts under the pressure of practical problems, and which gradually acquire the conscious uniformity of a type, and begin, at last, to defend themselves as such. The monopolies of Elizabeth were a set of devices of this kind for the solution of fiscal and administrative problems, and the trading companies were gradually converted, through the half-unconscious influence of policy, into instruments of monopoly. Indeed, all forms of industrial and commercial organization were tending to undergo the same transformation at this period.

The result of this tendency is most clearly shown in the case of the Levant Company, which was formed in 1581, two years later than the Eastland Company. The Levant trade, like the Spanish trade and the Baltic trade, had been open to all English merchants till that time. In the 'seventies steps were taken towards closing it. Of the four capitalists who took a leading part in this, one was a prominent Merchant Adventurer, a second was one of the governing body of the Eastland Company, and a third was an official of the customs. A special mission was sent through Poland to Turkey, and large sums were spent in obtaining from the Sultan concessions which had the effect of excluding other traders. The company admitted only twenty members, and was organized on a joint-stock basis, with Elizabeth as leading shareholder. No less than £40,000 of the bullion captured in 1579 was invested by the Queen in the Levant Company. A monopoly in currants was the central feature of the trade, the profits from this source alone being estimated in 1592 at £11,500 a year. The

⁷⁹ A. J. Gerson, E. V. Vaughan, and N. R. Deardorff, *Studies in the History of English Commerce in the Tudor Period*, New York, 1912, pp. 248 seq.

Government's share in the gain was not confined to a dividend on the profits. It levied a large new custom on currants, which proved to be the starting-point of the constitutional struggles under James I.⁸⁰

If the monopoly of the Levant Company was glaring, that of the other trading companies was not less real. The Russia Company was raising the price of cordage, the Spanish Company the price of fruit and oil, the French Company the price of wine. Listen to the complaints of honest parson Harrison in 1586.

"When every nation," he says, "was permitted to bring in her own commodities, foreign wares were far better, cheaper and more plentifully to be had. . . We had sugar for fourpence the pound, that now, at the writing of this treatise, is well worth half a crown, raisins and currants for a penny, that now are holden at sixpence. I do not deny that the navy of the land is in part maintained by their traffic, but so is the price of wares kept up, now they have gotten the only sale of things, upon pretence of better furtherance of the common wealth, into their own hands."⁸¹

But, after all, the most serious monopoly was that which remained in the hands of the Merchant Adventurers, the monopoly of the export of white cloth. A patriotic Englishman, it might be argued, would not mind an extra penny or two on the fruit for his Christmas pudding if he could persuade himself, however mistakenly, that Dreadnoughts were being built with the proceeds. But, if the exportation of England's chief manufacture were permanently restricted, money would soon be lacking alike for Dreadnoughts and for pudding. And, as a matter of fact, the Merchant Adventurers had contrived during this period to make the channels of exportation narrower than ever before. Until this time, their old rivals, the Hanseatic merchants, had contrived to maintain a considerable, though precarious, exportation of English cloth. In 1576 their rights of trade in London were limited. In 1580 they were entirely suspended. At the same time, the Adventurers began, with the approval of the Privy Council, still further to restrict their own members. The effects of all this on the cloth industry will be the subject of my next lecture.

IV. The Merchant Adventurers and the cloth industry

The defence set up for the Merchant Adventurers, when they were accused in 1550 of paying too low a price for cloth, namely, that there were too many clothiers, is one that we might not be inclined to take as seriously as it was intended. We are so apt to regard the continual expansion of the textile industries—first the woollen, and then the cotton—as a fact of primary importance in English economic history, that we can hardly bring ourselves to believe that the attitude of those authorized to speak on behalf of English trade and industry in the middle

⁸⁰ Scott, *op. cit.*, vol. II, pp. 83-8.

⁸¹ Harrison, *A Description of England*. See also "A Discourse of Corporations," 1587-89(?), *Harl. MSS.*, 4243, ff. 60 *seq.* (reprinted in Tawney and Power, *Tudor Economic Documents*, vol. III, pp. 265-76)

of the sixteenth century was one of scarcely veiled antagonism to such forms as that expansion was then taking.

Yet such was, undoubtedly, the case. The complaint of those clothiers who sided with the Merchant Adventurers—that there were too many clothiers not apprenticed—led to immediate action on the part of the Government. The evidence of “honest” clothiers—no doubt those who supported the Merchant Adventurers—and also of drapers, merchant taylors, cloth-workers, shear-men and other artificers, was heard by a Committee of the Commons. These witnesses, who belonged mainly, it will be observed, to the classes interested in the finishing and export of cloth in London or other towns, argued that the evils from which the cloth trade was suffering arose from the extreme covetousness of clothiers, who “do daily more and more study rather to make money than to make good cloths,” and advised that the length, breadth and weight of every species of cloth then made in England should be fixed for all time and enforced by penalties. The code thus promulgated was, according to the preamble of the Act embodying it,⁸² “to remain firm and perfect, notwithstanding any suggestions hereafter to be made by any clothier or cloth-maker to the contrary, as they have in like cases heretofore done.” The methods and standards of an industry then undergoing a rapid transformation were to be permanently stereotyped, and any demands for revision on the part of those interested in expansion were rejected in advance.

In the same session the use of the gigmill, one of the earliest applications of power to the textile industry, was prohibited,⁸³ and the growth of the new class of employers, who gave out work to country weavers, was deliberately hindered, by requiring them to have passed through a seven years’ apprenticeship to weaving before they could begin their entirely different occupation of connecting the weavers with the market.⁸⁴ The spirit which animates these Acts of Edward VI is still more clearly revealed in the chief Acts passed for the regulation of the cloth industry during the next reign—the Weavers’ Acts of 1555 and 1558. No clothier was to set up in the future except in a town or in a place where clothing had been carried on for ten years. No country clothier was to possess more than one loom or to hire out looms to others. No country weaver was to have more than two looms⁸⁵

Finally, the great industrial code of Elizabeth, the Statute of Artificers of 1563, added the finishing stroke to this series of restrictions, by forbidding anyone to be apprenticed to weaving but the son of a £3 freeholder,⁸⁶ thus barring the access to the industry of fully three-quarters of the rural population. The Legislature, which is sometimes supposed by scholars

⁸² 5 & 6 Edward VI, c. 6.

⁸³ *Ibid.* c. 22.

⁸⁴ *Ibid.*, c. 8.

⁸⁵ 2 & 3 Phil. and Mary, c. 11. The Act of 1558 is 4 & 5 Phil. and Mary, c. 5

⁸⁶ 5 & 6 Eliz., c. 4, s. 25

to have fostered the prosperity of the industry by these enactments, had as strange a way of dissembling its love as the person whose abrupt behaviour is celebrated in the well-known couplet.

The truth is, indeed, that the opinion of the average English country gentleman of the period was opposed to the expansion of the cloth industry. In the best economic treatise of the time, the *Discourse of the Common Weal*, the Knight, who represents that opinion, tells the Doctor that many wise men "think it better that all our wool were sold over the sea unwrought, than any clothiers should be set awork within the Realm."

"They take it," he adds, "that all these insurrections do stir by occasion of all these clothiers, for, when our clothiers lack vent over sea, there is great multitude of these clothiers idle, and, when they be idle, then they assemble in companies and murmur for lack of living, and so pick one quarrel or other to stir the poor commons, that be as idle as they, to a commotion"⁸⁷

That this was not a fanciful objection is shown by the passage in Shakespeare's *Henry VIII* (based on Hall's *Chronicle*) describing the rising in the eastern counties in 1525.

"For, upon these taxations
The clothiers all, not able to maintain
The many to them longing, have put off
The spinsters, carders, fullers, weavers, who,
Unfit for other life, compelled by hunger,
And lack of other means, in desperate manner
Daring the event to the teeth, are all in uproar,
And danger serves among them"⁸⁸

To return to the *Discourse*, the Doctor, who represents the most progressive opinion of his time, does not deny the reality of this social problem, but he urges that the Government ought not to shirk the increase of responsibility involved in an expansion of the cloth industry, if, as he argues, it is the chief means of bringing money into the country. Nevertheless, he is clearly of opinion that the expansion ought to take place in the towns, since the towns are the natural seats of industry.⁸⁹ This was the view universally held by contemporary theorists; and, since the disinterested outsider was so favourable to their cause, it would have been surprising if the towns themselves had not seized the opportunity to protect their supposed industrial interests. For this reason practically all interference, legislative or administrative, of the central or local authorities with the textile industries in the sixteenth century was intended to favour the towns. The only methods then conceivable of favouring the towns were such as would restrict the growth of country industry, or, at best, make it entirely subservient to the interest of town capital. And to restrict the growth of the textile manufacture in the country was to deprive it of the only field in which (as we now perceive) the conditions of the time favoured its prosperous development.

⁸⁷ *A Discourse of the Common Weal of this Realm of England*, ed. E. Lamond, 1893, p. 88.

⁸⁸ *Henry VIII*, act I, sc. 2.

⁸⁹ Lamond, *op. cit.*, pp. 89, 125-31

There is, however, one very striking and significant connection between the legislation of this period and the subsequent expansion of the textile industries in England. A considerable portion of the country, including the whole of Wales, the six northern counties, Cornwall, Suffolk, Kent, and the clothing districts of Wiltshire, Somerset and Gloucester, were exempted, either at first or later on, from the operation of the restrictive clauses of the Weavers' Acts, and it was almost entirely in the parts so exempted that the later expansion of the industry took place. If we are to draw any inferences at all from this connection, they cannot be to the credit of the Tudor industrial policy. The exemptions were a direct negation of that policy. No doubt, however, if the exemption is to be regarded as a cause of progress, the fact that the districts in question possessed influence enough in Parliament to secure exemption will indicate a positive political factor in economic development.

We may see this factor at work in the leading case of the western clothing counties, Wiltshire, Somerset and Gloucester. This region was already in the sixteenth century displacing the eastern counties from their earlier primacy amongst the manufacturing districts of England, and it was mainly outside the towns that the industry was spreading. Only the Stroud valley of Gloucestershire, however, had been exempted from the restrictions of the Weavers' Act of 1558. From 1575-7 the student of the Privy Council records can watch the operations in the western counties of one Peter Blackboro, who belonged to that new species—half common informer, half amateur inspector—which the exigencies of Tudor policy had called into existence. His business was to enforce the Weavers' Act, and to make his own expenses out of the process. The Council gave him a circular letter to the Justices of the Peace. The Justices of the Peace, themselves no doubt interested in the expansion of the cloth industry, protested against the exactions of the informer-inspector. Both parties were heard before the Privy Council, with the result that instructions were given in 1576 for the amendment of the Act.⁹⁰ In the Parliament of the same year, all those parts of the three counties in which cloth-making had been carried on for ten years were exempted from its operation.⁹¹

The direct restrictions of the Weavers' Acts were by no means the only hindrances imposed by the Legislature upon the expansion of the cloth manufacture. Three-quarters of a century before the passing of the Acts, the interference of Parliament had been invoked to check the growth of the industry at two vital points—by prohibiting or restricting the activity of middlemen in the supply of wool to the clothier, and by restricting the exportation of unfinished cloth. From the reign of Edward IV onwards, a whole series of Acts had been passed with each of these objects. If the Acts had been effectual, the growth of the industry would undoubtedly have been stopped. Both sets of statutes were, however,

⁹⁰ *Acts of P C*, vol. IX, pp. 16, 73 (Aug. 19, 1575, and Jan. 9, 1576)

⁹¹ 18 Eliz., c. 16

largely evaded, and new Acts were passed from time to time conferring exemptions in special cases, with the result that the Crown drove a profitable trade in licences both for dealing in wool and for the export of unfinished cloth. Thus the trade continued to flourish on a system of exceptions to what was regarded as the sound and orthodox rule of policy.

What, then, were the forces behind that policy? As in the case of the Weavers' Acts, they were mixed. Genuine opinion supplied the formal justification, vested interests furnished the motive power. To take first the case of the wool-dealer, the objection to the middleman, which dominates the whole of sixteenth-century legislation, was based partly on a real grievance of the mediæval consumer—the monopoly frequently exercised by rings of dealers in victuals in the restricted area of the local market—and partly on the idea that the local craftsman had a prior right over the outside trader to the material of his craft. But, in the sixteenth century, both consumption and production had outgrown the local market. The eastern counties were specializing in wheat-growing and dairy produce. The midlands were specializing in wool-growing and stock-feeding. The districts with water power, with iron, with clay and with coal, were specializing in manufactures. Each clothing district had its own make of cloth, which was known and valued in a distant market. Only through the ubiquitous activity of the middleman could these new productive powers realize their equivalent in exchange value. In the face of these obvious facts, the mere conservatism of genuine opinion, though this was a real factor, does not account for the persistent opposition to the middleman. And the records of the Privy Council show that it was the interest of the local consumer which acted as the efficient cause of administrative interference. Riots arose when the corn-broker began to transport his purchases; and the clothiers of some wool-growing counties predicted immediate ruin if the wool-dealers, who supplied the non-wool-growing counties, were allowed to transact any business in their neighbourhood.

In the case of the other set of statutes, those prohibiting the export of cloth till it was finished and dyed, the influence of vested interests on public policy was even more marked. The theoretical justification of this form of interference lay in a crude application of the mercantilist doctrine of the Balance of Trade. If the great mass of cloth usually exported in a white, unfinished state were dyed and finished in England, the value of our exports would be greatly increased, and a corresponding inflow of money would be the result, or, at any rate, a corresponding increase of employment would be secured for English workmen. This argument assumed that there was as good a market abroad for finished English cloth as for unfinished, which was very far from being the case. The best foreign market, that of Germany and central Europe, absolutely refused English finishing and dyeing, while it offered a steadily increasing

sale for English cloth that had been finished and dyed by continental workmen. Acts of Parliament might to some extent check the exportation of white cloth. They could not force a market for the finished cloth. The Acts were passed at the instance of the relatively small, but powerfully organized, bodies of cloth finishers and dyers in London and the chief industrial towns, most of which were strengthened by charters and special privileges in the sixteenth century, and in direct contravention of the wishes and interests of the much more numerous and important, but less organized and influential, textile workers in the country.

The last and most oppressive of these Acts was passed in 1566. It forbade any of the cloth made in Suffolk and Kent, the two great textile districts nearest to London, to be exported before being finished and dyed, and it required that merchants exporting cloth from other districts should carry out one finished cloth with every nine unfinished.⁹²

We shall, I think, understand the effect of these restrictions better, if we compare the conditions under which English industry was developing at the close of the sixteenth century with those that prevailed at the close of the eighteenth. The case of the cotton manufacture, during the earlier stages of the Industrial Revolution, presents certain instructive parallels with the case of the woollen manufacture in the reign of Elizabeth. Even the element of new technical inventions was not wanting to the earlier period, though, of course, there is nothing to correspond to the jenny, the mule and the steam-engine. But certain conditions quite as essential to the development of the industry are common to both cases —above all, a great accumulation of new capital and a simultaneous expansion of organizing ability. It was a vital factor in both these developments that the capital and ability accumulated in one field flowed over into other fields and fertilized them. Let us take an example or two from the later period, where the facts are, so to speak, writ large for our observation.

There is, first of all, the instructive case of William Radcliffe, who commenced life as a hand-loom weaver in a Derbyshire village some ten miles from Manchester, and who grew to be a great employer. Any young man of moderate ability and self-confidence, he tells us, could have got on at that time. The capital accumulating in his hands enabled him to give out work, exactly as a sixteenth-century clothier would have done, to all the villages round. Within about fifteen years he was finding employment for a thousand hand-looms; he had £11,000 invested in the business, a bank gave him credit for £5000. Most of this capital and credit was employed, not in the manufacture itself, but in trade. It was represented by large quantities of piece-goods on their way to the consumer, but still unsold. The new captain of industry could not extend his enterprise, unless he used his capital to find a new market. For this purpose, Radcliffe took as his partner a young Scot with more education

⁹² 8 Eliz., c. 6.

than himself, who brought £6000 into the business, and who visited the towns of Frankfurt and Leipzig, to open a market for the firm's muslins.⁹³

Or let us take the case of David Dale, the father-in-law of Robert Owen, and the founder of the New Lanark Mills. He commenced life, like Radcliffe, as a hand-loom weaver, but soon became clerk to a mercer, who very likely found work for weavers. Then we find him importing foreign yarns on his own account, to set weavers at work, and taking in a partner to help him. With the capital thus acquired he started a whole series of spinning mills, the first in Scotland, and the need of finding an outlet for his yarns led him to extend his operations to weaving and dyeing. Finally, as he was getting on in years, he disposed of his manufacturing interests to younger and more energetic men, like his son-in-law, and withdrew his own capital and organizing ability into the less speculative field of banking.⁹⁴

In the cases of Dale and Radcliffe we see capital accumulated in industry flowing over into commerce and banking. But all were not so successful as Dale. Even Radcliffe came to grief in his later years and was dependent on the capital of others. And, in many cases, capital and credit are to be observed flowing in the opposite direction. The merchant, who imported cotton, enabled the young manufacturer to set up for himself, by giving him three months' credit, while the exporting merchant rendered similar assistance by paying for the manufacturer's output week by week. It was in this way, by a flow of capital inwards from commerce, that most of the early industrial enterprises of Lancashire got started, and that the immense expansion of the cotton industry was rendered possible.

But another example is needed in order to complete the account, and to show the international significance of the development. At the moment when Radcliffe was sending out his partner to Germany, Nathan Meyer Rothschild was buying Manchester goods at Frankfurt for transmission to more easterly markets. Some quarrel with a Manchester merchant led him to think that he could make a better use of his capital by settling in Manchester himself. His father supplied him with £20,000, and he arrived to take part in an almost feverish expansion of the industry. He found that there were three separate profits to be made in the manufacture—one upon the supply of the raw material, one upon the spinning, and one upon the manufacturing and dyeing. His capital and organizing ability enabled him to combine all three. In half a dozen years he had turned his £20,000 to £60,000, and then, obeying the instinct of his race, and following the signs of the times, he withdrew his capital to banking, and became one of the leading figures in the London money market.

In the textile industries of the sixteenth century the same twofold flow of capital and credit—outwards and upwards from industry to commerce, inwards and downwards from commerce to industry—may be

⁹³ Wm. Radcliffe, *Origin of . . . Power-Loom Weaving*, 1828, pp. 9 seq.

⁹⁴ *Dict. Nat. Biog.*

easily observed. Perhaps the flow in the inward direction, from commerce to industry, as the more noticeable, may be considered first. The clearest example of this is to be found in the dependence of the Manchester industry on the credit given by Irish yarn merchants, and on others who "used to trust the poor inhabitants which had not ready money to pay until they might make cloth and sell the same to pay their creditors." From Acts passed to legalize the prohibited occupation of the middlemen who supplied wool to the clothiers in the Norwich and Halifax markets,⁹⁵ we may reasonably infer that, in these important centres, the majority of the large class of independent manufacturers owed their start in life to the credit furnished by the wool-dealer. So, too, we frequently find the small clothier unable to wait till his goods can find a market, and obliged to put them in pawn—to accept an advance upon them of half their value from what would be called in modern language a Commission House, who undertook to get the best price it could for them.

The flow of capital and credit in the reverse direction—upwards from industry to commerce—may be just as clearly proved, and is more significant of the expansion of the industry. The wills of the Halifax district show that it was not uncommon for clothiers, even at that distance from London, to own booths in Bartholomew Fair. A Rochdale clothier in 1568 sends up a parcel of his own woollen cloth, along with a parcel belonging to a neighbour, to a London factor who bears his own name. The factor sells it to a merchant for £20, to be paid in two months. Before the two months are up, the merchant becomes bankrupt, and the clothier is involved in a dispute with his neighbour, who holds him responsible. The cloth-workers of London acted as brokers or factors, advising the country clothiers as to the sufficiency of the merchant's credit. And the occasional losses of the clothiers, through the dishonesty of the merchants, indicate the extent of the capital which was flowing over from the manufacture of cloth into the export trade. In 1590 a writ of the Privy Council pursues a defaulting merchant, who had fled to Ireland owing £5000 to clothiers in Suffolk and Kent.

Truth embodied in a tale may not be unacceptable as testimony at this point. The exploits of the famous clothier, Jack of Newbury, though founded on fact, are mainly mythological, and the *Pleasant History of Jack of Newbury*, for the publication of which we are greatly indebted to Mr. Mann and the Oxford Press, is, quite obviously, a fantastically embroidered tradition.⁹⁶ But Deloney, the Elizabethan compiler, who dedicated it to the Clothworkers' Company, would not be likely to invent business details that were palpably absurd. He tells us that a certain Randoll Pert, a draper in Watling Street, who owed Jack £500, was cast into prison by other creditors, and that Jack refused to put in his

⁹⁵ 1 Ed. VI, c 6, and 2 & 3 Phil. and Mary, c 13.

⁹⁶ *The Pleasant Histore of John Wmchcomb, in his younger yeares called Jack of Newbery*, by Thomas Deloney, 1597 (in *The Works of Thomas Deloney*, ed F. O. Mann, 1912, pp 1-68).

claim lest he should lengthen the poor man's imprisonment. Years roll by, and Jack is made M.P. for Newbury. On arriving in London to attend Parliament, he calls for a porter to carry his trunk, but the porter no sooner beholds his face than he drops the trunk and flies. A ludicrous pursuit is followed by the romantic discovery that the porter is Jack's old debtor, Pert the draper. Jack hales him to a notary, and requires him to sign a bond to pay the £500 on the day when he, the threadbare porter, becomes Sheriff of London. Then the magnanimous clothier arrays his debtor in a suit of fair apparel, and stocks a shop for him in Candlewick Street with £1000 worth of cloth, and thus helps to fulfil his own remarkable condition, and recovers his £500.

These instances show that the flow of capital downwards and upwards—to the industry and away from it—which was the primary condition of its prosperity in the eighteenth century, was tending to be realized in the sixteenth. It was, however, as we have seen, hindered by counter-acting forces, in the shape of vested interests using the instrumentality of Parliament or the Privy Council, and of these forces the vested interest of the Merchant Adventurers was certainly one. At every crisis of their history we find their influence at work as a restriction upon the exportation of cloth. This was so in the original crisis of 1497, when the provincial merchants forced an entrance into the Company. The consequence of their previous exclusion, according to the Act of that date, had been "that the woollen cloth of this realm . . . by making whereof . . . the poor people have most universally their living . . . is not sold nor uttered as it hath been in time past, but, for lack of utterance in divers parts where such cloths be made, they be conveyed to London, where they be sold far under the price that they be worth . . . and at some time they be lent to long days and the money thereof at divers times never paid."⁹⁷ In other words, the London Adventurers, holding the position of sole exporters, could make what terms they pleased with the clothiers.

So, too, in the crisis of 1553, when Gresham intervened against the admission of more members of the New Hanse, his main objection is that they are, or may be, craftsmen⁹⁸ Moreover, the charters of the local Merchant Adventurers' Companies of this period are based on the exclusion of the manufacturer, and seek to prevent his capital overflowing into the export trade. This is proved by the later developments at Bristol, where, in 1566, the Merchant Adventurers of Bristol procured an Act of Parliament excluding retailers and craftsmen from the export trade. "But what hath happened unto those of Bristol by these means?" plead the Tuckers' Company, in a petition to the mayor and aldermen. "Bondage, bondage and misery. . . . A number of honest occupiers are cut off from occupying unto the sea, at whose hands the poor craft of tuckers earned more in a year than they do now by £200 or £300. . . . Some merchants use clothiers of the country so un honestly that we have heard some of

⁹⁷ 12 Hen. VII, c. 6.

⁹⁸ See above, p. 251.

the clothiers swear that they will sell their cloths at London or other places."⁹⁹ The force of public opinion was too strong to permit the continuance of this restriction on the rights of Englishmen. The Bristol Act was repealed in 1571, and the clothiers resumed their freedom of exportation.¹⁰⁰

Where aliens, however, were concerned, public opinion, in its crude form of national sentiment, enabled the Adventurers to suppress competition in the export trade. The Hanseatic trade with England had not succumbed to the blow dealt, at Gresham's suggestion, in 1552. Though the Germans never recovered all their old privileges, they continued, during the first half of Elizabeth's reign, to carry on a considerable trade in English cloth, and the extra channel of exportation provided by them was of the utmost value during the several stoppages of trade between England and the Netherlands. On these occasions the royal licences for the trade in white cloth, which the Adventurers regarded as their own monopoly, were largely bestowed upon the Hanseatic merchants. The Germans, moreover, contrived, in spite of the strenuous efforts of the Adventurers to dislodge them, to retain their right to buy cloth directly from the country clothier in Blackwell Hall, the London cloth hall. They thus acted as a second string to the clothier's bow, and relieved him of complete dependence on the Adventurers. By giving or taking credit, according to the circumstances of the clothier, they kept an additional tide of capital and credit flowing in and out of the kingdom, and contributed largely to the expansion of the industry. But, in the course of the second decade of Elizabeth's reign, fresh hostilities were aroused between the League and England, the causes of which I will discuss in my next lecture, with the result that the German merchants were first, in 1576, excluded from trading in Blackwell Hall, and later on, in 1580, deprived of the whole of their remaining privileges in England.

And, at the very moment when the foreign channels for the export trade were thus being closed, the native channels were being seriously narrowed. The establishment of a series of new monopolist companies, the Spanish Company, the Eastland Company and the Levant Company, took place in the same years, and was indeed largely prompted by the suppression of the Hanseatic trade in England. But these companies, as I have already pointed out, did not open new channels of exportation or of importation. They restricted the existing channels, and brought them under much the same influences as those which had hitherto prevailed in the Merchant Adventurers' Company. They may, indeed, be almost regarded as offshoots of the older Adventurers' Company. The formation of the new companies reinforced the monopoly of the old company in two ways. It relieved it of the pressure of its own increasing membership by affording some of the members new trade monopolies

⁹⁹ F. F. Fox and J. Taylor, *Some Account of the Guild of Weavers in Bristol*, 1899, pp. 92-3

¹⁰⁰ See above, p. 253.

to invest in; and it helped at the same time to check the competition of the outside free trader. Before the establishment of the Eastland Company, for example, the numerous free traders from the eastern parts of England, who traded to the Baltic, could compete with the Merchant Adventurers as exporters to Germany and eastern Europe. The Eastland Company set out on its career by a friendly partition of territory with the Merchant Adventurers, and it was equally intent on suppressing the free trader.

In the Parliament of 1581 another assault was made upon the monopoly of the Adventurers, by the introduction of a Bill to make its membership accessible to all freemen of London. The indignant protest drawn up on behalf of the Company casts a vivid light on the situation. So far, argued the Company, from there being any need to open the floodgates of commercial competition, it was generally agreed by those in authority that the Adventurers' membership had been increasing too rapidly. In consequence, they had of late restricted the admission of apprentices, and, with the approval of the Privy Council, had refused to admit members by redemption. "Besides," they added, "it were against all equity and reason that every subject of this realm, for a small sum of money, should have the liberty and freedom of that company . . . which, with very great charges to the said company, hath been procured and maintained. . . . It is also to be considered what persons a number of these men are which seek this freedom. Some be such as have by other trades and means gotten great wealth, and, not contented therewith, and perhaps by good laws restrained from their wonted usury, would seek new trades to employ their money upon."¹⁰¹

The effect of the Company's policy in restricting the flow of available capital into the most vital part of English foreign trade could not have been more forcibly put by its bitterest opponent. An equally striking companion picture exists, by no less a hand than the official historian of the Company,¹⁰² of the operation of that policy in checking the enterprise of the Company's own members, who were at this period trying to open up new markets in central Germany.

When the Merchant Adventurers were driven from Antwerp by the first stoppage of trade there in 1564, they were simultaneously invited by the citizens of Emden in Friesland and by those of Hamburg. They chose Emden, in the first place, and a large fleet, with 50,000 cloths and 25,000 kerseys, sailed to that port in May 1564. In a few days 14,000 pieces were disposed of, but, after that, sales ceased. The Adventurers packed up their cloth and made their way up the river, first to Cologne and then to Frankfurt, where they came into touch with the merchants whom they had been used to meet at Antwerp—the representatives of the great firms of Nürnberg and Augsburg, who supplied the connection with

¹⁰¹ "Considerations whie the bill against Merchants Adventurers should not passe" (*S P D. Eliz.*, vol. CXLVIII, no. 6, March 2, 1581).

¹⁰² John Wheeler, *A Treatise of Commerce*, 1601

eastern and south-eastern Europe. The ill effects of the closing of Antwerp were thus partly repaired. This new opening for trade was widened in later years, and, by the time Antwerp was finally closed in 1575, many English merchants besides the Adventurers had made their way into south Germany.

But such an opening of new markets by free enterprise, however desirable in the interests of English commerce and industry, was the last thing the Adventurers wanted. They could not apply the regulations and restrictions, by which they secured their monopoly, except by appointing a staple, and by forbidding their members and others to trade outside that limit. When Emden proved inadequate, they moved to Hamburg, and then, when the breach with the Hanseatic League drove them from Hamburg, they set up their headquarters at Stade near Hamburg, on the other side of the Elbe, where they did their best to prevent the further penetration of Germany by English enterprise. But in this new, more distant and much larger field, the Company had no such effectual means of controlling the trade as they had possessed in the days of the Antwerp settlement. They could not prevent outsiders from following the new routes, and their only remedy was to penalize the enterprise of their own members. I will give you the account of the matter in the words of Wheeler, the historian of the Company, who wrote to defend its privileges in 1601:

"In the year 1584," he says, "and a few years before, some of the Company had found out and used trade to the town of Nurenburg and other parts of Germany, contrary to the old good orders of the Company, especially that which forbiddeth trade outside the mart towns. . . . So that, where the trade was beforetimes in the mart towns between English and foreign merchants, it was now grown (especially in the town of Emden) to be between English and English merchants. Those which used this trade, to excuse their doings, alleged that they did transport and carry from the mart towns as great a quantity of cloths, kersseys and other woollen commodities, and at as good prices, as the merchant strangers did or would do, and that they brought to the mart towns as much foreign ware, and that as good and as good cheap, as the stranger merchants could do, and therefore, if the Merchant Adventurers were not of an envious disposition, they could be content that their own countrymen and brethren should rather gain than strangers."

Wheeler does, indeed, seem to put a powerful case against his client, the Company. We are naturally curious how he will answer it. He says:

"Hereunto it was answered, that, although all this were true and granted (as it was not, for that much might be excepted there against), yet all men of sound reason and understanding might easily see and perceive that a commodity sought for at the mart towns is more esteemed by the seeker thereof there, than if it were brought home and offered to him to sell at his own doors, and the merchants' proverb is that there is twenty in the hundred difference between 'Will you buy?' and 'Will you sell?'"¹⁰⁸

These may be excellent principles on which to carry out the sale of a horse—when you know the person who is bent on buying it—or for conducting any other transaction where the amount of supply and of demand are both fixed and the seller has a monopoly of the article. But, as a method of opening up a new market for an expanding manufacture in the face of competition, it leaves almost everything to be desired. It is

¹⁰⁸ Wheeler, *op. cit.*, pp. 68-9.

easy to imagine what the Consular Reports would say of modern British merchants who talked in this strain—how severely they would contrast such fatal self-satisfaction with the rush and enterprise of German competition.

If we now look back for a moment, and recall the various causes unfavourable to the growth of trade which we have seen to be at work since the opening of the third decade of Elizabeth—the prevalence of privateering, the restriction on banking and international credit, the interference with the wool-dealer and the clothier, the suspension of the Hanseatic trade, the closing up of one region of foreign trade after another by the erection of monopolistic companies, and, finally, the attitude of the Merchant Adventurers' Company towards the attempted expansion of their own branch of trade by their own members—we cannot be surprised to learn that the latter half of that decade was a period of great depression for trade in general, and especially for the cloth export.

Early in 1586 the situation became very serious, and, from that time till the eve of the Spanish Armada, it was continually occupying the attention of the Privy Council. The manufacturers of the west country were the worst sufferers. In May 1586 the Council received most alarming reports of the discontent prevailing in Somerset. The poorer sort, who were wont to live by spinning, carding and working of wool, were starving for lack of work, and were on the point of rebellion. Indeed, so dangerous was their state of mind that an accidental fire at Bath was taken as a beacon lighted to proclaim a general rising. The Council wrote to the Justices of the Peace, instructing them to call the clothiers before them and to command such as were able to keep their workpeople employed. Frivolous excuses were to be reported to the Council.¹⁰⁴

A year later, in April 1587, Leicester, who was taking the waters at Bath, wrote to Walsingham that trade was no better, though the clothiers had done their best and deserved great credit. Bristol and Southampton were falling into decay¹⁰⁵ Some remedy must be found, and that speedily. "This great matter of the lack of vent," wrote Burleigh to Hatton, "not only of cloths, which presently is the greatest, but of all other English commodities, which are restrained from Spain, Portugal, Barbary, France, Flanders, Hamburg and the States, cannot but in process of time work a great change and dangerous issue to the people of the Realm, who heretofore, in time of outward peace, lived thereby, and without it must either perish for want, or fall into violence to feed and fill their lewd appetites with open spoils of others, which is the fruit of rebellion."¹⁰⁶

The remedy proposed by Burleigh was to undo at one stroke the whole effect of the restrictions that had been accumulating since 1564. To have

¹⁰⁴ *Acts of P.C.*, vol. XIV, pp. 93-4 (May 6, 1586).

¹⁰⁵ *S.P.D. Eliz.*, vol. CC, no. 5 (April 6, 1587).

¹⁰⁶ *Ibid.*, vol. CCI, no. 15 (May 12, 1587), printed in Sir H. Nicholas' *Memoirs of the Life and Times of Sir Christopher Hatton*, 1847, p. 470.

more sales, he said, there must be more buyers and more ships. The Hanseatic trade must be restored, and the Steelyard merchants must be allowed to export unfinished cloth. Other alien merchants must be given the same liberty, and must be encouraged to use it by lower export duties. Blackwell Hall must be opened again to the dealings of the German merchants, and, if the Londoners refuse to do this, a cloth hall must be set up at Westminster.¹⁰⁷ And, finally, the exportation of cloth must be thrown open to all English merchants, whether free of the Adventurers' Company or not.

These remedies were undoubtedly the right ones, but they were applied too late to effect a sudden cure of the crisis. The channels of trade, which had been steadily narrowed during ten years by exclusion and monopoly, could not be immediately widened. The Council, with some demur, adopted Burleigh's proposals, but London resisted them. Two wealthy merchants, Sir Rowland Hayward, a prominent Adventurer, and Sir Edward Osborne, the founder of the Levant monopoly, two leading representatives of the restrictions which it was proposed to set aside, were sent by the City Council to the Secretary of State. The City, they said, duly submitted itself to anything which Her Majesty should command, but, in this matter of the opening of Blackwell Hall to strangers, it begged to be excused¹⁰⁸ There was no telling to what lengths the populace might go, if the hated Germans were allowed free trade in English cloth.

An additional staple was accordingly opened, at the sign of the George at Westminster, but, after weeks of weary waiting, the distressed clothiers had hardly sold a single cloth either at the George or at Blackwell Hall.¹⁰⁹ The London monopolists had established a complete boycott of the market amongst themselves. The Hanseatic merchants would not trade till their rights in Blackwell Hall were restored, whilst other English and foreign exporting agencies durst not take up cloth at a time of deep depression till they had got into touch with some foreign market. The Government was reaping what it had sown. The delicate and sensitive organization of international trade and international credit, which had suffered severe injury throughout a whole decade of reactionary policy, could not be suddenly restored to full activity. For some months, however, the Government persevered in its good intentions. The law forbidding the exportation of unfinished Kentish and Suffolk cloths was temporarily dispensed with, in spite of the opposition of a mob of London cloth finishers. London merchants outside the charmed circle of monopoly companies were induced to undertake the exportation of cloth. The negotiations for a settlement of the disputes with the Hanseatic League, which had been proceeding for some years, were continued, and, in the

¹⁰⁷ *Ibid.*, pp. 471-2.

¹⁰⁸ *S P D Eliz.*, vol CCI, nos. 31, 32 (May 17, 1587).

¹⁰⁹ Wheeler, *op. cit.*, p 77

meantime, the trade of the German merchants with London was provisionally re-opened. By the end of 1587 the country clothiers were feeling a decided improvement in the demand, and begged that there might be no return to the old restrictions.

It is at this moment that the war cloud of the Armada descends. When it lifts for a moment—for it never completely lifts during the rest of the reign—we find that, along with peace, the fair hopes of an open and expanding trade are likewise fled. The spirit of monopoly has resumed its sway. The breach with the Hanseatic League is now irreparable. A final decade of industrial depression, of social and political disquietude, is about to close the great age of Elizabeth.

V. The nationalist reaction and the struggle with the Hanseatic League

The Hanse League played a part in the history of European civilization of which the German people will always have just cause to be proud. During the course of the thirteenth, fourteenth and fifteenth centuries, it not only helped to build up in northern Europe a world of ordered commerce and peaceful culture that emulated the earlier achievements of Italy and Provence in the Mediterranean, but it became also a vitalizing link between western Europe and the awakening East.

It was by virtue of this positive and indispensable service, and not by any display of naval supremacy, that the Hanseatic merchants secured their position in English foreign trade. Their rights in the London Steelyard, which dated from the thirteenth century, were, in the main, like those of foreign settlements of merchants in other times and places—of the Merchant Adventurers in Antwerp or of the modern English traders in China—merely a safeguard against sudden gusts of native hostility, against the inequity of primitive law and against the fiscal extortions of the ruler. But, in addition to these rights, the German merchants, by virtue of services both to royal finance and to national commerce, did actually secure from the English kings certain privileges in the form of slightly lower export duties than those paid by the native trader. It was natural that these privileges should be attacked as soon as native commerce became active, self-conscious and organized; and it was inevitable that they should be withdrawn as soon as the native merchants could offer equal services to the power that had the bestowal of the privileges. They were, however, attacked long before they were finally withdrawn. They were often prematurely abolished and again restored. The struggle between native and foreign trade lasted, in fact, for over two centuries.

It was complicated and embittered by another grievance. In the course of the fourteenth century, English merchants began to penetrate the Baltic and to trade in the Hanseatic ports. It seemed only fair to them

that they should enjoy in Danzig or Riga rights equivalent to those held by German traders in London and Boston. And this claim, strenuously advanced long before it could be supported by an adequate power of bargaining, was the starting-point of the periodical attacks on the privileges of the German Steelyard.

The situation repeats itself with monotonous regularity—under Richard II, under Henry IV, under Henry VI, under Edward IV, under Henry VII. The English merchants, backed by a growing nationalist feeling, put pressure on the Kings to withdraw the Hanseatic privileges in England, unless equal privileges are granted in Prussian towns. But, in the end, it is always found that the services of the German merchants to King and nation are too valuable to be hazarded for the sake of obtaining relatively small advantages in a distant and undeveloped field of English trade; and so, by degrees, the *status quo ante* is resumed. The Germans retain a solid footing in London. The English remain on a dubious footing in the Prussian towns.

The struggle is unedifying, except in so far as it illustrates the restrictive operations of mediæval notions of trade policy. The German victories were Pyrrhic victories. The Germans lost by being able to exclude English traders from fuller trade in Prussian towns. The English, on the other hand, gained through being unable to retaliate by turning out the Steelyard men from London. There are no triumphs of constructive and far-sighted statesmanship to be celebrated. The conflict has little more significance for the subsequent economic development of England and Germany, than the mediæval conflict between Yarmouth and the Cinque Ports over the North Sea fisheries has for the twentieth-century prosperity of Hastings and Yarmouth. There have proved to be fish enough in the North Sea for both combatants, and likewise for Lowestoft and Grimsby, although their powers of capture have multiplied a hundredfold. The same is true of the trade relations of England and Germany.

With these introductory remarks, we may approach the crisis of 1552. The English Crown, for purposes of State finance, and on the advice of Gresham, withdraws once more the privileges of the Hanse.¹¹⁰ The significance of the event is that on this occasion the withdrawal, though not final, is the beginning of the end. It rests on a deliberate identification of the interests of Crown finance with the interests of the organized monopoly of English merchants; and this combination of interests will, later on, in the reign of Elizabeth, become the dominant factor in policy, and will suffice to expel the Hanseatic merchants.

For the moment, however, Gresham's plan fails. King Edward dies. Mary becomes Queen, and, at the request of Philip, restores the privileges of the Steelyard on two conditions—(1) that the Prussian towns shall admit English traders, and (2) that the German merchants shall not infringe the monopoly enjoyed by the Merchant Adventurers of trade in

¹¹⁰ See above, p. 235.

unfinished cloth with the Netherlands. They are to ship their cloth only to their own ports in Germany. This condition excluded the German merchants from the full use of the international cloth market at Antwerp, and, though they accepted it, many of their number failed to carry it out. In 1555 the Adventurers commenced a new assault on the Steelyard. They induced the city of London to exclude the German merchants from trading with the clothiers in Blackwell Hall, and persuaded the Queen to reduce their privileges to the form of a temporary licence. During the same year the Adventurers made two large loans to the Government.

In 1557 a new point of difference arose. The export tax on undressed cloth had till now been 2s. 9d. on the cloth for an ordinary foreigner, 1s. 2d. for the English merchant, and 1s. for the Hanseatic merchant. The prices of cloth, as of other goods, were rapidly rising, and the Government proposed to revise the export duties on cloth. The duty henceforward to be paid by the ordinary alien exporter—the Netherlander or the Italian—was raised to the high figure of 14s. 6d. per cloth. The English exporter was to pay 6s. 8d., and the Hanseatic trader was placed on the same level as the native Englishman.

Already exasperated by their exclusion from Blackwell Hall, and from the exportation of English cloth to the Netherlands, the League now broke off all direct trading relations with England.¹¹¹ They were not resumed till after the accession of Elizabeth, in 1560, and, even then, the settlement was not a permanent one, but only a temporary makeshift, which left the parties still at issue on fundamental points. The German merchants were admitted once more to Blackwell Hall. They were allowed to export English cloth through Antwerp, as long as they did not sell it there. In regard to the export duty, they were to pay the same rate as the English exporter, viz. 6s. 8d.¹¹² This working arrangement was maintained for sixteen years, and a very considerable trade was carried on under it. But friction was continually generated, and latent hostility kept alive, by two causes, which, in the end, combined to produce a more permanent breach. On the one hand, there was the obstinate refusal of the League or of its representatives to abandon a claim of privilege over English traders, both in England and in Germany, that was now entirely obsolete. On the other hand, there was the persistent effort of the Merchant Adventurers to obtain, with the support of the Government, a monopoly of the trade of England with central Europe.

We are not here concerned, you will observe, with a struggle between England and Germany, nor was the final result the victory of one of these over the other. I have shown in previous lectures that the interests of the Merchant Adventurers' Company were not identical with, but opposed to, the interests of the people of England; and it would not be difficult to show that the interests of the League were in conflict with the

¹¹¹ Ehrenberg, *Hamburg und England*, p. 55

¹¹² *Ibid.*, p. 57

larger interests of the people of Germany. Both the Adventurers and the League were seeking to establish a monopoly, and, in either case, the monopoly was more prejudicial to the merchants' own country than to the foreigner. The result of the struggle was that the two monopolies helped to destroy each other, which was a positive good to both countries alike. But, as the Adventurers and the League contrived to involve their respective nationalities in the conflict, there also resulted a serious injury to trade and friendly intercourse, which was a positive loss to both sides. The identification of the sympathies of two living nations with the protagonists of a dead and futile issue is not merely a harmless illusion of patriotism, it is an error that falsifies the whole meaning of history.

To return to our narrative. The next crisis in the relations between England and the League, after the settlement of 1560, was occasioned by the stoppage of English trade with the Netherlands in 1564.¹¹³ This was due to a complication of causes. The strained political relations between England and Spain were, of course, at the bottom of it; and this combined with trade rivalry to produce, in the English Parliament of 1563, legislation hostile to the merchants and the shipping of the Netherlands.¹¹⁴ The previous raising of the export duty on cloth had affected the Netherlanders very seriously. Since the days of Henry VII, they had been united by treaty with England on a footing very advantageous to both parties. For a brief period at the end of Henry VIII's reign, their merchants had even been admitted to the export trade on a footing of equality with Englishmen, with results highly favourable to the English industry. The sudden withdrawal of this concession, with the subsequent raising of the export duty from 2*s. 9d.* to 14*s. 6d.*, was a serious grievance. On the top of this came the legislation of Elizabeth's second Parliament, which aimed at restricting the carrying trade of the Netherlands and the importation of their manufactures. But the immediate occasion of the stoppage proclaimed by the Netherlands Government was the English privateering, which began during the war with France in 1562, and which seriously damaged neutral trade.

The stoppage itself lasted a year. It was ended, not by a permanent settlement of differences, but, as in the case of the Hanse, by a temporary arrangement, which was liable to be soon disturbed, and which did, in fact, break down again five years later, in 1569, after the seizure by Elizabeth of the bullion fleet. Both the stoppage and the ensuing uncertainty were very serious matters for England, more serious in the case of the Netherlands trade than even in that of the Hanseatic trade. The Netherlands were England's closest neighbours and earliest allies. Their ports, and especially Antwerp, were her main gateway to the Continent, the chief outlet for her cloth, her chief source of supplies and almost her only channel of international credit. In all these respects, the friendly

¹¹³ Ehrenberg, *op. cit.*, pp. 64-75.

¹¹⁴ See above, p. 255.

connection with the Netherlands (established by the treaty of Henry VII) was an essential factor in the economic prosperity of England, for which it would be hard to find a substitute. The only likely substitute lay in the ports of northern Germany.

But how if the Hanseatic League were to seize the opportunity of settling old scores with England—of regaining their old privileges? A move was, in fact, made in this direction. Philip of Spain, on behalf of the Netherlands, offered to make an alliance with the League against England, and it still seems to be a matter of poignant regret to Dr. Hagedorn that this offer was not accepted.¹¹⁵ If Germany had at that propitious moment made common cause with the Netherlands against England, she might, he thinks, have secured unconditional success, and the whole of subsequent history might have been different. What form would this unconditional success have taken? The League demanded the complete restoration of its time-honoured privileges; that its merchants, that is, should retain a favoured position, as compared with English merchants in England, and that they should not be asked to admit English merchants to German ports on an equal footing with themselves. In other words, the League wished to retain an artificial monopoly of the trade in eastern Europe, when the conditions which gave them a certain degree of natural monopoly had passed away. A forceful policy at a crisis like that of 1564 might have secured this object for a year or two, but retaliation and defeat must have followed. The League's monopoly of the Baltic trade was doomed, not primarily by the intrusion of English traders, but by the development of the Scandinavian nations, by the competition of the Netherlands, and, most of all perhaps, by the opposing interests of that larger Germany which was not represented in the League.

If, indeed, those responsible for the policy of the Hanseatic League had possessed any real insight into the immediate future, and had been capable of representing the interests of Germany as a whole, it is conceivable that they might have made good use of the crisis of 1564. Looking back, one can see that an entirely new situation is going to arise, which will affect the course of European trade for a whole generation. The struggle of the Dutch against Spain was destined, first seriously to disturb, and then gradually to close, the main highway of trade between England and central and eastern Europe. The best, though not the only, alternative route lay through the Hanseatic ports. England was hard pressed to find an outlet for her cloth. If the League had offered to open its ports, in return for equal treatment of its merchants in England, and if the offer had been accepted, the Hanseatic cities might have entered on a new lease of active and prosperous existence. They might have forestalled those advantages which the Dutch ports secured by a like liberal policy a generation later. Such a policy would also have checked the growth of the restrictions on the export trade in England.

¹¹⁵ B. Hagedorn, *Ostfrieslands Handel und Schiffahrt im 16. Jahrhundert*, pp. 166-70

Let us consider briefly what actually happened instead of this. The leaders of Hanseatic opinion, who were lawyers, not merchants, clung, with all the obstinate pedantry of a grand-ducal high chamberlain, to the literal restoration of their obsolete and impossible privileges, and refused to sanction the opening of their ports. But the League could not control the action of its own members; nor were all the German ports members of the League. Emden in East Friesland, which had suddenly risen, by its position as a neutral in the wars of the sixteenth century, to be the most flourishing port in all Europe, was not in the League, and need not ask its permission.

When Antwerp was closed to the English in 1564, Emden offered itself first, and was accepted. But the remoteness of the port, and the boycott exercised by the Hanseatic and Netherland merchants, made it unsatisfactory as a market for cloth. The English merchants, accordingly, used it as a port of transit on the way to Cologne and Frankfurt, and began to open up a market in central Germany by that route. But, within a year, a temporary settlement was made between England and the Netherlands, and trade resumed its old course through Antwerp.

By this time, however, it was clear that the internal troubles of the Netherlands might at any time occasion a new stoppage. The negotiations between England and Hamburg were, therefore, resumed, and an agreement, which opened the trade of Hamburg to the Merchant Adventurers for ten years, was arrived at in 1567.¹¹⁶ When the trade with Antwerp was suddenly stopped a second time, in consequence of Elizabeth's seizure of the bullion fleet at Plymouth, the trade with Hamburg had already begun. In 1569 three great fleets, laden with cloth and closely guarded against attack, left England and arrived safely in Hamburg, one in the spring, valued at £150,000, and two more in the autumn, valued at £200,000. During the three or four years of the stoppage of English trade with Spain and the Netherlands, this important connection with Hamburg continued. Then, for a couple of years, 1573-4, Antwerp was reopened. It was closed finally by the Spanish Fury in 1576.

In the same year a great crisis was reached in the relations of England and the Hanseatic League. The ten years' agreement made with Hamburg in 1567 was fast drawing to a close. Was it to be renewed, or were the comparatively friendly relations that had subsisted under it between England and Germany to cease? Undoubtedly the agreement had been of great commercial advantage to both countries. A fresh outlet had been found for English cloth. The Hanseatic merchants had shared with the English merchants in the exportation, and Hamburg had become a flourishing seat of the cloth-finishing industry. The arrangement rested on the uncertain basis of a tacit compromise; but, if it continued to bear good fruit, it might strike firm roots. Old grudges and obsolete claims might be forgotten. Which side was to blame for the fact that this did

¹¹⁶ Ehrenberg, *op. cit.*, pp. 90 seq.

not happen? No one who has intimately studied the psychology of international disputes will ask that question. Both parties are always to blame, and it is of relatively little consequence to ascertain, even if it were possible, which party is the more blameworthy.

The League had protested from the first against the invitation offered by Hamburg to the Merchant Adventurers, and, though it acquiesced for the time in the arrangement when made, its leading representatives viewed with strong dislike and apprehension the penetration of central Germany by English merchants. The Adventurers, on the other hand, had an equal objection to the position which the Hanseatic merchants had re-established for themselves in Blackwell Hall. The Germans not only bought cloth direct from the country clothiers in London; they sent their sons and apprentices into the English textile districts, to gain a practical knowledge of the business. This mutual interaction and inter-penetration of the two peoples was one of the foremost conditions of the economic progress of both. This may seem a truism to us, but it would have appeared a wild paradox to the sixteenth century. If the modern German historian of that period still views with retrospective dismay the advance of the bagman of Elizabethan England into the unguarded interior of his country, and laments with bitterness that steps were not taken in time to stay his devastating hand, we may be quite sure that both the English and German merchants of that age were not more enlightened in their economic views. As far as England is concerned, I have tried to show in my previous lectures that the second decade of Elizabeth was a period of marked reaction, both in economic practice and in economic theory, which culminated in 1576 in a series of restrictions on foreign trade and international credit. The temper of a people whose Government and leading classes were deriving profit from systematic privateering would not be likely to be friendly to the alien merchant.

Such were the inflammable conditions under which the fires of relentless hostility between England and the League were kindled. It appears to have been the Londoners who took the first overt step towards a breach, by excluding the Steelyard men from Blackwell Hall in January 1576. The League, which had been long working to prevent the renewal of the treaty between Hamburg and England, now required Hamburg to refuse to renew it, except on the conditions that the right to trade in Blackwell Hall should be fully restored, and that the Londoners should assist the League to recover their old privileges. The dispute had thus got back to the old impracticable ground, and an *impasse* was soon reached. As London rejected the League's terms, Hamburg was induced, though with much reluctance, to refuse to renew the treaty.¹¹⁷ This decision was arrived at in June 1578, and in the next month the Hanseatic merchants were forbidden to trade in England, except on the same footing as other

¹¹⁷ Ehrenberg, *op. cit.*, pp. 137 seq.

foreigners. A year of futile negotiation followed, and in January 1580 the breach was completed. This date, it will be observed, divides the reign of Elizabeth almost exactly in the middle, and during the latter half friendly relations with the Hanseatic League were never fully resumed.

Let us now attempt to estimate the consequences of the breach. To take the simplest first, the Merchant Adventurers were obliged to leave Hamburg. They had calculated on being able to find a home in Stade, which was only a few miles distant across the Elbe, but the authority of the League over Stade sufficed for the moment to prevent this. So they once more moved their headquarters to Emden, and remained there until 1587. Emden was not a member of the League, but it was, nominally at least, subject to the Empire. The League, if it wished to expel the Adventurers, must invoke the authority of the Empire against Emden. But, in order to justify the action of that authority, it must take higher ground than it had previously done. The privileges for which it had been contending were not an imperial interest. The greater part of Germany had no share in them, and was, indeed, a loser by them. The League, therefore, bestirred itself to make out a case before the Reichstag for the expulsion of the Adventurers from the Empire as monopolists; and, in 1582, the Reichstag was induced to recommend this course to the Emperor.

In the meantime, however, the Adventurers and their friends had been active on the opposite side. The Count of Friesland had been able to cite the opinions of citizens of Emden, Cologne, Bremen, Munster, Brunswick and Hamburg, as well as of learned jurists, to the effect that the Adventurers had done nothing contrary to international law, and that their cloth was cheaper than that of the Hanseatic merchants. Monetary arguments also are said to have been offered. The Emperor, in consequence, did not fully adopt the advice of the Reichstag, but confined himself to warnings, and the Adventurers remained undisturbed at Emden. From that port they were able to carry on a considerable part of their trade with Hamburg and the rest of Germany. In a few years, Hamburg and Stade had repented of their submission to the authority of the League, and each of them was prepared to set it at defiance, if the Adventurers would return. And in 1587 the Adventurers, being dissatisfied with the accommodation of Emden, and finding that Stade offered better terms than Hamburg, went to Stade, and remained there till 1598.

If we regard the matter merely as a conflict between the Merchant Adventurers and the League, the victory, so far, seems to be entirely on the side of the Adventurers. Twenty years have now elapsed since their expulsion from Hamburg, yet, in spite of the constant efforts of the League, the Adventurers have never lost their foothold on German soil; and, for the last ten of those years, they have found friendly shelter in one Hanseatic port, and have received pressing invitations from another. The Hanseatic merchants, on the other hand, except for a few months in 1587, have been excluded from all their privileges in England.

Nor was this the only apparent triumph of English policy over the League. The chief scene of the early struggle of the English merchants for equality of treatment had been the port of Danzig. Danzig had obstinately refused to admit any claim for reciprocity, even when urged to do so by the League; and its unequal treatment of English merchants had been one of the main grounds for the suspension of the Hanse privileges in England. Now Danzig had a deadly feud with the smaller port of Elbing, which lay across the gulf, on another mouth of the Vistula, some thirty miles away, and had even attempted in 1577 to destroy Elbing's approaches from the sea. The English seized the opportunity to make a treaty with Danzig's rival, which thus served as the headquarters in the Baltic of the new Eastland Company. Elbing, like Stade, was nominally a member of the League, but its own interests and the hostility of Danzig led it to repudiate the League's exclusive policy and to welcome the English traders.¹¹⁸

It is not unnatural that the modern German historian, who is sadly recording the decay of the Hanseatic League, should find in these events one of the many causes of that decay. This is Dr. Hagedorn's view. He sees, or thinks he sees, the triumphant advance of English national policy, far-sighted, determined, consistent, unscrupulous—in short, a Bismarckian policy—and he attributes the decay of the League, and the decline of German commerce, entirely to the want of a similar policy on the part of the German Empire. In taking this view, Dr. Hagedorn seems to me to confuse two very different things—national unity and national policy. The absence of any organic national unity in the Germany of the sixteenth century was, no doubt, a prime cause of the decay of German commerce. But the vigorous assertion of the obsolete claims of the Hanseatic League, which had no organic connection with German national life as a whole, would neither have called national unity into existence, nor have prevented the decline of German trade. On the other hand, the growth of an inward organic national unity was a vital cause of the economic progress of England in the sixteenth and seventeenth centuries. But the authority of the Crown and the policy of the Executive were not the roots of that growth. The Tudor State and the Tudor policy were, indeed, a first crude attempt to interpret national unity. But that interpretation was already called in question by Parliament and the people, and was ultimately set aside and discredited.

May not this policy, nevertheless, have been at the time a primary cause of national development, of commercial and industrial prosperity? The hand of Burleigh, says Dr. Hagedorn, controlled all the threads of commercial policy. The national companies were fostered by his fatherly care. He it was who placed the English State at the service of the merchants, and who contrived to use the merchants as agents of the Crown.

¹¹⁸ A. Szlagowski and N. S. B. Gras, "The Eastland Company in Prussia, 1579-1585," in *Trans. Roy. Hist. Soc.*, 1912, pp. 163 seq.

Thus were laid the foundations of British commercial prosperity and of British world power.

There is to the natural man something very attractive and plausible in this view, but the facts do not support it. The triumphs of English policy, in so far as they consisted in strengthening the monopoly of the Merchant Adventurers, in setting up new monopolistic companies and in excluding the German merchants from their accustomed share in English trade, were won at the expense of national commerce and industry, and led immediately and unmistakably to a period of prolonged depression. In the crisis of 1587 we found Burleigh acknowledging the evil effects of this policy, and endeavouring to reverse it, by reopening the trade of the Hanseatic League, and by setting aside the monopolies of the trading companies.¹¹⁹ Then came the Spanish war, and, with war, reaction.

The last fifteen years of Elizabeth's reign, the fifteen years that followed the defeat of the Armada, have never received that attention from historians which their supreme importance deserves. For of this period, more appropriately, I think, than of any other, it may be said that in it modern England had its beginning. But, despite our lack of adequate knowledge concerning the period, there are at least three statements that can be made with some degree of confidence concerning it.

In the first place, it was during these years that the policy of which the charter of the Merchant Adventurers in 1564 was one of the earliest embodiments—the policy of commercial and industrial monopoly—reached its final culmination. In the last decade of Elizabeth scarcely an article in common use—coal, soap, salt, starch, iron, leather, books, wine, fruit—was unaffected by patents of monopoly. And the second statement, which will be equally unchallenged, is that during this period the protest of public opinion against the policy of monopolies gathered such strength that it would have led to a serious breach between Crown and people if the Queen had not, with equal tact and audacity, repudiated the policy. And, thirdly, it seems to be universally agreed that the period was one of almost unmitigated and continuous depression in agriculture, commerce and industry. The latest authority on the subject, Dr Scott, bears emphatic testimony to this.

"The war with Spain," he says, "resulted in a very material increase in taxation, which reacted on trade, while, at the same time, the closing of certain markets on the Continent, with the levies of men and ships . . . made this period one of great depression."¹²⁰

And again:

"English traders were now excluded from Spain, Portugal, Barbary, the Levant and, to a considerable extent, from Poland, Denmark and Germany. Moreover, foreign trade was conducted at very great risk . . . It was said by Raleigh in 1593 that the merchants of Newcastle 'lay still from fear,' while 'our trades decay every day.' As time went on, it became clear that the loss from stoppage of trade and the taking of ships by the enemy was far from being made good by the prizes."¹²¹

¹¹⁹ See above, pp. 274-5.

¹²⁰ Scott, *Joint-Stock Companies*, vol. I, p. 93.

¹²¹ *Ibid.*, pp. 97-8.

Another symptom of depression was Elizabeth's difficulty in obtaining loans:

"The Queen was forced 'to descend to mean men' and 'pick up money here and there' as it could be obtained."¹²²

In August 1597, after a persistent agitation lasting over twenty years, the Hanseatic League persuaded the Emperor to issue a decree expelling the Merchant Adventurers from the Empire as a company of monopolists,¹²³ and, in the following February, the organization of the Adventurers at Stade, which for ten years had been their headquarters, was dissolved, and their settlement broken up.¹²⁴ The English Government retaliated by expelling the German merchants from the Steelyard, which had been their headquarters in England since the thirteenth century.¹²⁵

But the expulsion of the English monopolists from Germany, and the withdrawal of the Hanseatic privileges in England, did not necessarily bring all trade between the two countries to an end. On the contrary, it presented a golden opportunity to the free traders or interlopers, to those merchants, that is to say, who carried on their trade without the sanction of any charter or the protection of any monopoly. This class of traders had become extremely numerous in Elizabeth's reign. As the monopoly charters closed one channel of foreign commerce after another, the excluded traders and the enterprising beginners were obliged to become interlopers or starve. The long Dutch War of Independence, which at first blocked trade altogether, served, in its later stages, to cover much free trading. Amsterdam, in particular, is said to have owed its prosperity chiefly to this cause; and the new Republic was led by the necessities of its situation to avoid the fatal exclusiveness of the Hanseatic League, and to welcome traders of all countries on an equal footing with its own citizens.

During the disturbed conditions that had prevailed ever since the Adventurers had finally left Antwerp, a large part of the English exportation of cloth had been carried by English interlopers to Dutch and German ports. These ports served as a safety-valve to the monopoly system, and they were actually recognized as such in statistics presented to the Government. When the monopolists were expelled, the interlopers hastened to occupy the vacant field of enterprise. The Emperor's edict did not apply to them, and the members of the Adventurers' Company were fain to carry on their trade in the guise of interlopers at Stade and Emden.

It was not to be expected, however, that the Company would readily abandon its monopoly. Since the German ports were closed, a new channel must be found, or an old one reopened. Several of the lesser Dutch ports were willing to offer hospitality and special advantages. Middelburg was selected, and, in August 1598, the Privy Council issued an order

¹²² *Ibid.*, p. 101

¹²³ Ehrenberg, *op. cit.*, pp. 194-5.

¹²⁴ *Ibid.*, p. 200.

¹²⁵ *Acts of P.C.*, vol. XXVIII, pp. 238, 613-14 (Jan 13 and July 25, 1598).

which made Middelburg the sole channel for all trade carried on by English merchants with the Netherlands and Germany, and re-established the monopoly of the Adventurers in that trade.¹²⁶ An instantaneous outcry from the clothiers, the shipping interest, the interloping traders and the provincial ports showed how fatal such a policy would be if it were persisted in. It was accordingly dropped, and the trade of the interlopers with the Dutch and German ports was allowed to resume its course without prejudice, as the Privy Council carefully explained, to the chartered rights of the Adventurers ¹²⁷

But how were those rights to be secured, if the trade with Germany were to continue, whilst the Company had no recognized footing there? One section of the Company was for opposing the German trade, and for insisting on the monopoly of the Middelburg staple. But another section, whose interests were in Germany, was in favour of a compromise. If the Government, whilst throwing open the German trade to all English merchants, were to insist that it should be all carried on through the two ports of Emden and Stade, then the Merchant Adventurers, relying on the strength of their old connections there and on the power of their private and secret combinations, might still hope largely to control the trade in their own interests, and to secure the position of middlemen between the interlopers and the internal trade of Germany. In the last few years of Elizabeth's reign we find them struggling, with very imperfect success, to preserve this remnant of their old monopoly.

Let us now consider how these events had affected the interests of German commerce and industry. The stoppage of trade between the two countries raised as loud a protest in Germany as in England, and showed at once how little claim the Hanseatic League possessed to act as the mouthpiece of a united Germany. Even the League itself was by no means united on the subject of English trade.¹²⁸ Stade was quite willing to admit even the Adventurers. Hamburg and Bremen depended very largely on the trade with the English interlopers. Of the larger cities, only Lubeck, the head of the League, was bent on totally excluding the English trader from Germany; but Lubeck had the support of the traders in the smaller towns, who wished to monopolize the trade of the country round them. Patriotic feeling has led German historians into considering Lubeck and the League as the champions of the national economy, vainly striving to repel the rising tide of English competition.

How entirely erroneous this view is, we perceive when we turn to consider the protest of that part of Germany which lay outside the League. In the sixteenth century, Augsburg was one of the leading centres of European commerce and finance. Its position on the chief road connecting Venice with Germany and northern Europe had raised it to great pros-

¹²⁶ *Acts of P.C*, vol XXIX, pp. 24-5 (Aug 6, 1598).

¹²⁷ *Ibid*, pp. 302-3 (Nov. 24, 1598).

¹²⁸ Ehrenberg, *op. cit.*, pp. 202-3

perity in the early Middle Ages, and the wealth accumulated in commerce had served as capital for the expansion of the textile industries and of mining. It was here, too, that the great system of international credit, whose operations I have described in earlier lectures, arose. Some of the leading bankers of Antwerp had been originally citizens of Augsburg. They were merchants as well as bankers, and they dealt in the textile fabrics of south Germany. Before the trade of Antwerp was stopped, they had met the English merchants there, and had exchanged their fabrics for the English woollen cloth, while, at the same time, they supplied much of the credit which enabled the trade to be carried on. Since Antwerp was closed, they had met the English merchants, who had entered Germany through Emden, at Frankfurt or Strassburg, and they did a more profitable business with them than they could do through the Hanseatic merchants. From them they obtained the supplies of wool with which they kept at work some thousands of weavers in the villages round Augsburg, and in them they found the best customers for their textile manufactures.

All this fruitful intercourse had been brought to a standstill since the issuing of the Emperor's decree, which had been interpreted in many quarters as prohibiting trade with Englishmen altogether. The merchants and manufacturers of south Germany, therefore, besought the Imperial Council that a free commercial intercourse with England might be restored as soon as possible.¹²⁹

¹²⁹ Ehrenberg, *op. cit.*, pp. 203-4.

JOHN U. NEF

The Rise of the British Coal Industry

*An Early Industrial Revolution
Substitution of Coal for Wood*

From THE RISE OF THE BRITISH COAL INDUSTRY, Volume I, Chapters II and III, Pages 165-223. London: GEORGE ROUTLEDGE & SONS, LTD., 1932.

An Early Industrial Revolution

Is any parallel for the rapid expansion of coal mining to be found in the history of other British industries during the sixteenth and seventeenth centuries, or was this expansion merely a result of the shortage of wood and of the growth of population? It is obvious, of course, that the increase in population must have occasioned an increased demand for manufactured goods, but was there a native development of industry and manufacture which was more than proportionate to the increase in population? Without a more detailed investigation than can be attempted in these pages, it is only possible to give a tentative answer to these questions. But such information as has been found suggests that, while the expansion in coal mining was undoubtedly more rapid than that in other industries, this expansion is not an isolated phenomenon in early British economic history, but part of a general industrial development, the importance of which has not yet been fully appreciated. This industrial development not only involved a remarkable growth in the output of many commodities; there were also technical improvements and changes in organization, which, together with the evidence of a rapid growth, lead us to suggest very tentatively that the late sixteenth and seventeenth centuries may have been marked by an industrial revolution only less important than that which began towards the end of the eighteenth century. An attempt is made in succeeding chapters to explain some of the technical developments of the period, and to show how the increasing importance of coal mining involved changes in industrial organization. In the present chapter we are concerned, however, only with the growth of industry.

The change which overtook English economic life between the early sixteenth and the late seventeenth centuries needs no emphasis. A diarist in the reign of Henry VIII would hardly have thanked God with the same assurance as Pepys for the monthly evidence of his advancing fortune, measured in terms of hard cash. As the new age advances, the difference of atmosphere becomes more marked. To steep oneself in English literature of the early eighteenth century, or in the accounts of foreign observers like Montesquieu or Voltaire, is to be aware of the extent to which the commercial spirit has permeated the lives, not only of town merchants, but of country squires and courtiers; of all, in short, who aspire to worldly honours. The merchant has become, in Johnson's oft-quoted phrase, "a new species of English gentleman".

While historians have long recognized the growth during the seventeenth century, amid the débris of an outworn gild system, of an increasingly capitalistic society, in which the joint-stock company and the

financier first become important, it is sometimes implied, nevertheless, that openings for capital were found primarily in trade or in colonial enterprise, and that manufactures, apart from textiles, did not develop to any marked degree before the era of the great inventions. In the absence of any comparative statistics of the home production of salt, or soap, or beer, in the sixteenth and seventeenth centuries, this view of the course of manufacture has been encouraged by the magnitude of the progress made during and since the Industrial Revolution, which has tended to obscure the signs of an earlier development. Confirmation of the view is found in the history of the two industries of tin mining and iron smelting. The annual production of the Stannaries seems to have shown a slight decrease during the century from 1550 to 1650, and to have advanced very slowly during the succeeding century,¹ while the output of iron seems to have remained stationary after the Restoration.² It is desirable, therefore, to begin our discussion with the metallurgical industries, and to consider first the extractive and then the manufacturing stages.

It is possible to suggest reasons why the output of tin cannot be taken as a satisfactory measure of industrial activity during the sixteenth and seventeenth centuries. The chief markets for it had been in the export trade and in the native manufacture of pewter, though supplies had also been required for coinage and for the making of bronze, in which tin is compounded with copper. Now, the growth of the foreign market, which had provided a lucrative field both for the tinners and the London pewterers throughout the Middle Ages, was checked by the increasing production of tin abroad, and by the improvement in the technique of pewter-making in France and Flanders, where it had previously been inferior to that in England. As a consequence, the London pewterers (who monopolized the greater part of the native production) not only had trouble in selling their wares abroad, but met with foreign competition at home.³ If the export market did not actually shrink, it cannot have expanded to any considerable degree. At home, the tin industry suffered from additional handicaps. For domestic utensils and plate, pewter, lacking durability, was tending to be superseded by china ware and pottery, which was being turned out in north Staffordshire in increasing quantities. Except as an ingredient in making bronze, tin was apparently little needed in the English industries of the seventeenth century; the process of tin plating was introduced commercially only just before 1700.⁴ Bronze goods gave way, in large measure, before brass, chiefly as a result of the discovery of "calamine", or zinc, in 1566, by William Humfrey, founder of the Company of Mineral and Battery Works, who had set men to search for it in the region of the Mendip Hills.⁵ Hitherto no zinc had been found

¹ G. R. Lewis, *The Stannaries*, Appendix J, and p. 41

² See below, pp. 293-4.

³ Lewis, *op. cit.*, pp. 47-8.

⁴ Houghton, *Husbandry and Trade*, vol. ii, pp. 178 sqq.

⁵ Scott, *Joint Stock Companies*, vol. ii, p. 414, *V.C.H. Somerset*, vol. ii, p. 389

in England, and, as brass was made by combining copper with prepared calamine, brass ware had been imported, for the most part from Nuremberg. Humfrey's discovery made possible a new native industry, and led to the substitution of brass for bronze in the casting of church-bells, cannons (which were also made from iron), cannon balls, and ordnance of all kinds. It encouraged the native manufacture of pins and wool cards (for the carding of wool), both of which could be prepared only with a supply of brass or "latten", a species of brass, wire.⁶

While the development of the brass industry tended to depress the output of tin, it must have encouraged the output of copper. The activities of the Society of Mines Royal in Cumberland and Wales during Elizabeth's reign, and more particularly the founding of the Company of Mineral and Battery Works, indicate an effort to supply copper for the first time in large quantities.⁷ Neither of these societies concerned themselves in any way with tin mining. Apart from their search for the precious metals and for copper, they were chiefly interested in lead, of which increasing supplies were now wanted for roofing houses, sheathing the hulls of men-of-war, making bullets and shot, grates, hearths, and furnaces. In the reign of Charles I the annual output of lead in England is said to have reached about 12,000 tons,⁸ as compared with a recorded tin production of about 500 tons.⁹ Lead, like copper, production had probably been increasing for some time. In the Mendip district the output began to increase about 1550 and reached a peak about 1670, in the Derbyshire district the industry is said to have been in a flourishing condition throughout the seventeenth century.¹⁰

If it is possible to account for the stationary condition of tin production during the sixteenth and seventeenth centuries by referring to a shrinkage in the market both for English tin and for alloys containing English tin,¹¹ no similar explanation could be made to account for a decline in iron production. But how far is the history of iron output really parallel to that of tin output? The assumption that there was a definite decline in the output of iron is based on a comparison of the 300 furnaces mentioned by Dud Dudley in 1665, with the 59 furnaces which are said to

⁶ Scott, *op. cit.*, vol. i, pp. 30, 31, 39; vol ii, pp. 413-29, Unwin, *Industrial Organization*, pp. 164 sqq., 236 sqq.

⁷ The literature concerning the early history of these two companies is already considerable. We may mention here H. Hamilton, *The English Brass and Copper Industries to 1800*, 1926; Scott, *op. cit.*, vol. ii, pp. 383-429, W. G. Collingwood, *Elizabethan Keswick*, 1912; C. T. Carr, *Select Charters of Trading Companies* (Selden Soc., vol. xxviii, 1913), pp. 48 sqq., S. P. D., *EIR.*, vol. clxx, no. 37, *Lansdowne MSS.*, 5, no. 47, and 19, no. 98. A further list is given by Lewis, *op. cit.*, pp. 41-2 (note 6).

⁸ 12,600 "foder" (*S. P. D.*, *Charles I*, vol. cccxli, no. 130, (?) 1636)

⁹ For the five years from 1638 to 1642 the annual production of tin in Devon and Cornwall did not exceed 1,100,000 lb. (Lewis, *op. cit.*, appx. J).

¹⁰ J. W. Gough, *The Mines of the Mendip*, 1930, p. 112, *V.C.H. Derbyshire*, vol. ii, p. 331 — references for which I am indebted to Mr. F. J. Fisher.

¹¹ Lewis (*op. cit.*, pp. 41 sqq.) mentions technical causes for the slump in the development of tin mining, e.g. the greater cost of mining materials, and the fact that depths were now reached at which drainage became a much more serious problem and expense. But these factors applied equally to coal mining, yet they did not check the expansion of that industry

have been operating in 1720.¹² But Dudley's use of round numbers suggests that he was guessing, and recent investigations have shown that most of his guesses should be swallowed with a grain of salt.¹³ His figure is really of little use for purposes of comparison. On the other hand, it has recently been shown that many large furnaces were omitted from the list of 1720, and that the figure for the national iron production derived from it is, for other reasons as well, an under-estimate.¹⁴ It is impossible, moreover, to compare the output even on the basis of the number of furnaces at work at different periods. The producing capacity of a single furnace undoubtedly increased, we know that the average annual output of one furnace in 1720 amounted to nearly 300 tons, whereas in the reign of Elizabeth the usual output was, perhaps, in the neighbourhood of 75 to 100 tons.¹⁵

When every allowance is made for Dudley's inaccuracies, for the under-estimate of early eighteenth-century production, and for the increasing output from a single furnace, the impression remains nevertheless, that there could have been no substantial increase in English iron production between 1660 and 1720; and there is an abundance of further evidence to support this conclusion. But what happened to the iron industry during the preceding century? There is some reason to think that it grew rapidly in importance under Elizabeth and James I, reaching a high point about 1610, after which date the output of iron remained stationary, if it did not decline.¹⁶ A list, drawn up in 1574,¹⁷ enumerates 52 furnaces and 51 forges in England, and, even if this is an under-estimate,¹⁸ they certainly multiplied in the years immediately following. Norden, in 1607, counted 140 "hammers and furnaces" in Sussex alone,¹⁹ and an anonymous inventor in 1611 estimated for England and Wales 800 "iron mills", of which half were in Sussex and Surrey.²⁰

¹² Dudley, *Metallum Martis*, 1665, p. 50; H. Scrivenor, *History of the Iron Trade*, 1841, p. 57. Mr Ashton has found that the list which gives the figure 59 furnaces is dated 1720, not 1740 as Scrivenor has it (Ashton, *Iron and Steel in the Industrial Revolution*, 1924, p. 235).

¹³ Ashton, *op. cit.*, pp. 10-12. See also Galloway, *Annals*, p. 256, and below, note 20.

¹⁴ Ashton, *op. cit.*, pp. 235-6.

¹⁵ The output contemplated for an iron mill in Cannock Chase in 1588 was 100 tons (*Lansdowne MSS.*, 56, no. 36). By an agreement made in 1589, 3,000 cords of wood were to be supplied every year for an iron works at Cofty English in Glamorganshire (*H.M.C. Report on the MSS. of Lord de L'Isle and Dudley*, vol. 1, p. 29), and since it required about 40 cords to produce a ton of iron (see below, pp. 319), the undertakers must have planned for an annual production of about 75 tons.

¹⁶ Production is known to have fallen off enormously in Surrey and Sussex, and also in Derbyshire (E. Straker, *Wealden Iron*, ch. viii, *V.C.H. Derbyshire*, vol. ii, pp. 356 sqq.).

¹⁷ *S.P.D., Eliz.*, vol. xciv, no. 15, vol. xcvi, no. 199.

¹⁸ Ashton, *op. cit.*, p. 6.

¹⁹ John Norden, *The Surveyor's Dialogue*, 1607, pp. 214-15. This statement seems to be wrongly cited by L. F. Salzman (*English Industries of the Middle Ages*, 1923, p. 40) as "140 forges".

²⁰ *Harleian MSS.*, 7009 f. 10. It is probable that this includes both forges and furnaces. Dudley's estimate, referred to above, does not include forges. According to him there were 500 of these (*op. cit.*, p. 50). Malynes (*Lex Mercatoria*, 1622, pp. 269-70) also refers to 800 English iron works; which suggests that this estimate in round numbers may have been current in the early seventeenth century. Being current, it was probably highly inaccurate, and it is not impossible that Dudley was simply repeating it.

While the rapid increase in the smelting of iron did not continue after the first decade, or at any rate after the first quarter of the seventeenth century, it is by no means likely that there occurred a similar slump in the manufacture of finished metal goods. The smelting of copper and lead, which perhaps increased no less rapidly during the reigns of Elizabeth and James I than did the smelting of iron, probably suffered a somewhat less serious depression during the remainder of the seventeenth century, for copper and particularly lead could be produced with a smaller expenditure in wood fuel than could iron. The supplies of iron and copper turned out in the native furnaces and forges were supplemented by increasing imports from abroad—especially from Sweden. At the beginning of the eighteenth century, when conditions were favourable for foreign trade, the imports of bar iron were probably about equal to the native production²¹ Even if that did not increase after the first quarter of the seventeenth century, a considerable increase may have occurred, therefore, in the amount of metal worked up by British artisans into pins, nails, razors, scissors, pocket knives, ships' anchors, wagon wheels, horses' bits, fire hearths, locks and keys, wool cards and combs, and a thousand other articles, which the ingenuity of man (or, at least, of that growing minority of mankind which went under the name of Smith) busied itself in making.

It is not possible to advance quantitative evidence in support of this view: to show, for example, that the yearly output of nails, or of horses' bits, was much greater in 1700 than in 1550. Yet a general survey of other industries which required metal tools and accessories—such as shipbuilding, coal-mining, salt making, and glass manufacture²²—suggests that there developed in precisely this period a great new demand for metal goods, while the writings of contemporary Englishmen and foreigners show that serious efforts were contemplated to relieve the country from its dependence upon Holland for finished iron and copper products,²³ and to supply these products by native manufacture; efforts which—to judge from the number of artisans apparently engaged and the fame of some of their produce—must have met with substantial success “The Skill and Neatness of our Workmen is such in Locks, Keys, Hindges, and other Curiosities of this kind”, wrote Davenant in 1699, “that our Exportations of these Commodities may in time grow very considerable”.²⁴

The importance of such manufacture before the Elizabethan Age must not be under-estimated. Smiths and metal workers of all kinds had been numerous in towns, and even in very small villages, during the Middle

²¹ Mr Lipson puts the total imports of bar iron, in the second decade of the eighteenth century, at between 14,000 and 22,000 tons (*The Economic History of England*, vol. ii, 1931, p. 161); while, according to Mr. Ashton, the output of bar iron, at this time, was probably nearer 18,000 or 19,000 than 12,060 tons, the figure given in the list of 1720 (*op. cit.*, pp. 235–6)

²² See below, pp. 298–310

²³ Houghton, *op. cit.*, vol. ii, pp. 212–13, Yarranton, *op. cit.*, pp. 61–4.

²⁴ *An Essay upon the Probable Methods of Making People Gainers in the Balance of Trade*, 1699, p. 155.

Ages, as Mr Salzman's survey of medieval industries convincingly shows.²⁵ One has only to consider the powerful position then occupied by the goldsmiths or the pewterers among London Companies, to realize how profitable trade in products of gold and tin had already become. Both goldsmiths and pewterers, however, dealt primarily in articles of luxury, such as plate and jewellery, which only the richer citizens could afford; and, consequently, dealers depended for gain rather on the high price of their wares than on the quantity of their output. The new demand, which developed in Elizabethan times and after, was primarily for products of the coarser metals, which were wanted for use rather than display, and which derived their value from their abundance and cheapness. The expansion in native shipbuilding²⁶ called for supplies of lead, brass, copper, and, above all, iron wares, for even a boat of wood could not be constructed and launched without nails to hold the planks together, wire for the masts, chains and anchors to allow her to ride at rest in harbours. In an account of 1618, showing the expenses for building ten men-of-war, five per cent of the total payments went for anchors.²⁷ When it came to equipping battleships, far larger quantities of metal work had to be provided than in the case of merchantmen, not only for the cannons and cannon balls, but for sheathing the hulls, either with iron or lead.²⁸ Between June 24th, 1660, and March 27th, 1661, a period of nine months when the nation was at peace, and when the navy probably still drew its principal stores of iron from Sussex and the Forest of Dean, one man, Richard Foley, who made his fortune as a capitalist from heavy industry in his native Staffordshire, supplied Sir George Carteret, Pepys' chief at the Navy Office, with £5,000 worth of iron wares.²⁹ In addition to the manufacturing regions, such as south Staffordshire, Sussex, and the Forest of Dean, London, and no doubt all the chief shipbuilding ports, had their special gunsmiths and anchor smiths, who worked primarily for the navy.³⁰ And, if the growth of the English navy stimulated the demand for metal wares, the expanding use of artillery and explosives in the warfare which raged, especially on the Continent, during the sixteenth and seventeenth centuries, stimulated this demand still further. Cannons of bronze, but more often of cast iron or brass, muskets and small arms made from gun metal (an alloy of zinc or tin and copper), bullets of lead and shot of iron and lead,³¹ all the engines, in short, which men have invented for their own destruction, were wanted in ever-increasing quantities. Saltpetre and gunpowder manufacture, which was probably intro-

²⁵ Salzman, *op. cit.*, esp chap vii.

²⁶ See below, pp 298-300.

²⁷ Cited by W. Sombart, *Der Moderne Kapitalismus*, vol 1, pp 767-8.

²⁸ Apparently iron was first used for ship's sheathing, but later lead was substituted, probably because it could be supplied more cheaply (*Cal. S.P.D.*, 1660-1, p. 549).

²⁹ *Ibid.*

³⁰ *Cal. S.P. Colonial*, 1661-8, p. 427, *P.C.R.*, vol. lviii, pp 116, 124

³¹ *Cal. S.P.D.*, 1653-4, p. 142; Houghton, *Husbandry and Trade*, vol. ii, pp 204-6. The method of manufacturing cast iron cannons is said to have been introduced into England in 1543 by a Sussex iron master, who employed a Flemish gunsmith to produce explosive shells (Samuel Smiles, *Industrial Biography*, 1863, p 33)

duced in England in our period,³² involved the use of copper kettles.³³ The growth in population and in wealth, together with the remarkable rise in the cost of timber, stimulated a demand for metal in more peaceful industries. Coal mining required substantial supplies of metal for the pumping machinery which was being set up, not only at the larger collieries but also at small "land-sale" enterprises throughout the coal fields. Saltmaking, alum and copperas manufacture, soap boiling, sugar refining, and the dyeing of cloth—all industries which were progressing rapidly³⁴—required metal pans, boilers, and vats.³⁵ In building operations, iron bolts, locks and keys, and gates were wanted in greater quantities for protection against thieves, while lead was increasingly used instead of thatch or shingle for roofing.³⁶ Iron hearths, rare before the adoption of coal as fuel, were installed not only in the houses of the middle class in the principal towns, but very generally in the dwellings of humbler subjects, even in remote hamlets.³⁷

Before the middle of the eighteenth century, the importance of the metal industries in England was, of course, a commonplace. "Persons, especially well informed concerning English commerce, assure me that the trade in iron, and iron and copper products, employs as much labour and yields as great a return as does wool", wrote in 1738 a certain Monsieur Ticquet, who had come to England to study the development of heavy industry.³⁸ English writers from Yarranton to Defoe, in surveying the economic condition of the country, refer to the army of metal workers in terms which could hardly have been employed before the reign of Elizabeth; and, while it may be felt that Ticquet's statement goes somewhat too far, all observers are in essential agreement as to the growing importance of this manufacture.³⁹ An anonymous English authority, who wrote some years earlier than Ticquet, tells us that Staffordshire iron utensils "are made . . . in the utmost beauty and perfection".⁴⁰ In the district round Birmingham were perhaps half a dozen towns (Sedgley, Dudley, Wednesbury, Walsall, and Wolverhampton), each with a thousand or more metal workers,⁴¹ and these artisans were scarcely less numerous about Sheffield or Wigan.⁴² Even by the middle of the seventeenth century the casual village smith, who supplied the neighbouring popu-

³² See below, p. 311.

³³ See below, p. 336.

³⁴ See below, pp. 300-5, 310-12, 314

³⁵ See below, pp. 331-40 *passim*

³⁶ Exch. K.R. *Misc. Bks.*, vol. xxxvii, f.317.

³⁷ See below, pp. 325-6.

³⁸ *Copie d'une lettre écrite par un françois étant en Angleterre le 1^{er} Septembre 1738* (*Archives Nationales*, O¹1293).

³⁹ Yarranton, *England's Improvement by Sea and Land*, 1677, pp. 58-9, Defoe, *Tour*, 1769 ed., vol. iii, p. 425. G. L. Beer (*The Commercial Policy of England Towards the American Colonies*, 1893, p. 83), ranks "iron production" third in importance among British industries at the beginning of the eighteenth century.

⁴⁰ *A New Present State of England*, c. 1727, vol. i, pp. 213-14.

⁴¹ Yarranton, *op. cit.*, pp. 58-9, Houghton, *op. cit.*, vol. ii, pp. 220-1, *A New Present State of England*, loc. cit. As early as 1590, bar iron was brought to Walsall from as far away as Nottingham (H.M.C., *Report on the MSS. of Lord Middleton*, p. 495). Probably much Shropshire and Forest of Dean iron was also made into finished goods in Staffordshire.

⁴² Defoe, *Tour*, 1769 ed., vol. iii, pp. 100-1, 108, 281.

lation with nearly all its metal ware, was becoming relatively less important. Only a diminishing proportion of the goods now turned out was consumed locally, and the artisans themselves were increasingly employed by large merchants as "putting out" workmen. The new industries, which had no place in the gild organization of the old towns, naturally lent themselves with particular ease to large-scale production.⁴³ Not only did the artisans tend to specialize in the kind of article they turned out, but in the production of a single article, a pin of brass-wire, nine distinct operations might be performed, each by a different worker, as John Houghton showed in one of his weekly discourses concerning husbandry and trade, an example which Adam Smith selected much later for his celebrated illustration of the division of labour.⁴⁴ Such specialization indicates a highly developed stage of manufacture.

Satisfactory statistics concerning the output of finished metal goods in Great Britain will be much more difficult to compile than statistics concerning the output of coal; and, up to the present, no effort has been made to compile them. The case in favour of a remarkable growth in the metal manufactures between 1550 and 1700 must rest, for the moment,⁴⁵ upon incomplete evidence concerning the increase in the demand for them, the increase in the number of artisans employed in the metal trades, the increase in the domestic production of iron, lead, and copper during the reigns of Elizabeth and James I, and the increase in the imports of such metals.

While the evidence with reference to the output of such goods is of an indirect nature, enough quantitative data are already available to indicate that the production of ships, of salt, and of glass in Great Britain increased far more rapidly during the period from 1550 to 1700 than did the population.

The coal trade itself created a great demand for ships to carry away the produce from the mines. Before Elizabeth's reign, the total quantity of English and Scotch coal shipped by sea probably did not exceed 40,000 to 50,000 tons a year. Foreign vessels took all consignments for foreign ports, and even a part of the consignments for native ports. It is said that in 1550 the traffic to London employed only two native ships,⁴⁶ and it is questionable whether the kingdom then possessed twenty coal hoyts altogether. But, at the end of the seventeenth century, more than 1,600 vessels were employed in the carriage of coal by sea.⁴⁷ All the vessels engaged in the coastwise trade, and the great majority of those engaged in the foreign trade, were now British owned; for by means of preferential duties the Government had largely succeeded in driving out aliens.

⁴³ See, for instance, Henry Hamilton, *The English Brass and Copper Industries to 1800*, 1926, pp. ix, 69 sqq.

⁴⁴ Houghton, *op. cit.*, vol. ii, pp. 192-4; *Wealth of Nations*, bk. 1, ch. 1

⁴⁵ But see below, pp. 327-31

⁴⁶ Hylton Dale, *Coal and the London Coal Trade*, 1912, p. 5

⁴⁷ More than 1,000 in the English east-coast trade, and several hundreds in other branches of the coastwise and in the export trade

After the Restoration, about eight tons in every ten exported from the Tyne and the Wear to foreign countries were carried in an English vessel.⁴⁸ River boats carrying coal were even more numerous than sea-going colliers. On the Tyne, at the beginning of the eighteenth century, there were at least four hundred keels (as compared with forty before Elizabeth's reign), and at Sunderland perhaps two hundred more, as well as a prodigious number of lighters at London to unload coal for the use of the metropolis, or to carry it farther up the Thames, barges at ports like Bridgwater or King's Lynn for bringing Welsh or north country coal inland by river, and river colliers on the Severn and Trent to transport downstream the produce of mines round Broseley and Nottingham.⁴⁹ The total number of craft engaged, in 1700, primarily in moving coal may be estimated, without fear of exaggeration, at from three to four thousand.

According to Sir Francis Brewster, the Dublin magistrate who published a treatise on trade and navigation in 1695, nearly thirty per cent of all English vessels were at that time engaged in the coal trade.⁵⁰ Although the demand for ships in other branches of commerce had not expanded at so impressive a rate, the shipping business had received substantial encouragement from many other trades. from the fishing trade, the Baltic timber trade, the French wine trade and, from the growing traffic with India and America. Such statistics as have been brought to light suggest that there was a notable development in all branches of the native shipping industry, not only after the passage of the Navigation Acts, or the establishment of the preferential duties on particular goods which preceded those Acts, but during the reigns of Elizabeth and James I.⁵¹ Between 1550 and 1660 the total tonnage of the Royal Navy apparently increased six fold.⁵²

Native shipping increased; but to what extent the ships were built in native yards is another question. After the imposition of preferential taxes on foreign-owned vessels, a controlling interest in these vessels

⁴⁸ According to information obtained from *Exch K R Port Bks*, 193/1, 195/13, 196/2, and *Sackville MSS* ('An account for . Ld. Buckhurst, upon Coales exported', June 3rd to December 25th, 1663).

⁴⁹ Four hundred coal ships are said to have plied on the Severn in 1758 (*V C H Salop*, pp 435-6)

⁵⁰ *Essays on Trade and Navigation*, p. 75 Brewster estimated that there were in all 11,000 English merchant ships, of which number 4,400 were fishing smacks, 1,900 were employed in the trade with the Straits and Portugal, 800 in the French trade, 400 in the Sound, 500 in the trade with Muscovy, and 3,000 in the coal trade. Doubtless all his figures were exaggerated

⁵¹ W. Sombart, *Der Moderne Kapitalismus*, 1916, vol 1, p. 762, and vol 11, p. 300, *Krieg und Kapitalismus*, vol 11, pp 175 sqq., R. G. Marsden, "English Ships in the Reign of James I", in *Trans. Roy Hist Soc*, N S, vol xix, 1905, pp 309-42 Merchant ships of 100 tons and more in burden are said to have increased in number as follows -

1545	35
1577	135
1582	177
1588	183
1629	350

And the ships in this class increased not only in numbers but in size.

⁵² Sombart, *Der Moderne Kapitalismus*, vol i, pp 762, 766.

was frequently purchased by English adventurers, who thereby brought them under the term "native", within the meaning of the Act. Again, during the Dutch wars, captured enemy boats were made over to English owners.⁵³ Consequently a large number of ships flying the English flag had, in reality, been fitted out by foreigners, and, apart from necessary repairs, had brought business to foreign rather than to native shipbuilders.⁵⁴ Nevertheless, after every allowance for this factor has been made, it is undoubtedly true that native shipbuilding was stimulated by the increase in trade, particularly by the increase in the coal trade, and that a large proportion of all sea-going vessels, and the vast majority of all harbour and river boats, were turned out in English yards, especially at Ipswich, Yarmouth, Newcastle, Bristol, Whitby, and London. Only at the very end of the seventeenth century did there set in at these centres a serious and prolonged depression in shipbuilding, which was due in part to the over-stocking of the merchant marine with foreign prizes.

The view that England and Scotland underwent a period of rapid industrial expansion before the eighteenth century is strengthened by the history of the salt manufacture, the second of the industries for which statistical evidence is available. Salt is made in one of three ways: by boiling down the liquid from inland brine pits or springs, by evaporating sea water collected in trenches or pans along the seashore, or by dissolving into brine a mineral known as rock salt. Before Elizabeth's reign only the first two of these methods had attained importance in the British Isles⁵⁵

There is no means by which to determine the early output from the brine springs at Droitwich in Worcestershire and at Northwich in Cheshire, which were described by Leland in the course of his travels during the thirties of the sixteenth century.⁵⁶ At the time of Harrison's visit, towards the middle of Elizabeth's reign, there were at Droitwich 360 furnaces, producing 1,400 or 1,500 weighs (of 40 bushels) of salt per annum.⁵⁷ For Northwich and the other seats of brine manufacture in Cheshire—Middlewich and Nantwich—we find no estimate of production

⁵³ R. B. Westerfield, *Middlemen in English Business*, 1915, p. 229.

⁵⁴ By 14 Car. II, c. 11, all foreign-built vessels not purchased before October 1, 1662, were to be considered "aliens", even if owned and manned by English subjects, but it is hardly probable that the Act was rigorously enforced, and, in any case, an exception was made for "such ships as shall be taken at sea by Letters of Mart or Reprisal and Condemnation made in the Court of Admiralty as lawfull Prize".

⁵⁵ For details concerning the first two methods see Agricola, *De Re Metallica*, trans. by H. C. and L. H. Hoover, 1912, pp. 545-7.

⁵⁶ *Itinerary*, 1538, vol. v, p. 92.

⁵⁷ Each furnace yielded 4 loads of salt per annum, according to Harrison (*Description of England*, 1577, chap. xiii). Therefore 360 furnaces must have yielded 1,440 loads. The load, according to Harrison, was of 5 to 6 quarters, i.e. 40 to 48 bushels, and since the "weigh" (the most common measure for salt in the sixteenth and seventeenth centuries) is said to have been of 40 bushels, we may suppose that the load mentioned by Harrison and the weigh were roughly equivalent.

until the reign of Charles II,⁵⁸ when John Collins, the first great authority on the salt trade, puts the combined output of these three works at rather more than 500 weighths a week,⁵⁹ or let us say from 20,000 to 25,000 weighths a year. This was a considerably larger output than that of the entire country in the reign of Henry VIII.⁶⁰ It is reasonable, therefore, to suppose that the salt industry in Cheshire had been expanding rapidly. Northwich accounted for sixty per cent of the output of Cheshire when Collins wrote. As the brine manufacture at Droitwich was more famous than that at Nantwich, it is not improbable that the output of salt was as great. If that is so, it is clear that the industry in Worcestershire had also expanded greatly since Harrison's time.

The method of obtaining salt by evaporating sea water, like the method of boiling down brine, went back to an early epoch in English history,⁶¹ but, until the sixteenth century, it had been a casual occupation, carried on by a few poor dwellers near the coast, upon their own initiative, and with an inadequate equipment. As late as 1526, Tynemouth Monastery, which owned most of the sites in Northumberland where this manufacture was destined to develop, received only £61 in annual revenue from its sales of salt.⁶² It was between 1563 and 1571, through the initiative of Cecil, that the earliest attempt was made to establish, with the help of German artisans, a heavily capitalized industry on a large scale, first at Dover, and later at Blyth on the Northumberland coast. Backed by a group of influential court officials, who obtained an exclusive patent in 1566,⁶³ John Mount, one of Cecil's secretaries, undertook to buy out the small men, or "Haglayers" (who had hitherto been the sole makers), and to install a number of expensive iron pans, all to be operated as a single enterprise.⁶⁴ He failed for want of capital.⁶⁵ But during the 'nineties, groups of London, King's Lynn, and north country merchants succeeded where the politicians had given up. Within the framework of the well-

⁵⁸ There is extant, however, a survey (made in 1651) of the brine of 24 hours' boiling at Nantwich in Cheshire (*Augm. Parl. Surveys*, Cheshire, no. 20). *Exch. Dps. by Com.*, 6 James I, Hilary 13, deals with an interesting suit concerning the salt works at Droitwich. See also *V.C.H. Worcestershire*, pp. 256-61.

⁵⁹ John Collins, *Salt and Fishery*, 1682, p. 3. The weekly output in bushels is given by Collins as follows: Northwich, 12,214; Middlewich, 4,300; Nantwich, 4,200.

⁶⁰ See below, p. 304.

⁶¹ Both methods antedate human records (see the Hoovers' note in their edition of Agricola's *De Re Metallica*, p. 546).

⁶² *A History of Northumberland*, vol. viii, p. 114.

⁶³ 8 Eliz., cap. 22.

⁶⁴ The change from wood to coal fuel at the brine springs in Cheshire (see below, p. 333) involved the substitution of iron for lead pans (*Roy. Soc., Philos. Trans.*, vol. iv, 1669, pp. 1061-9), and the same substitution may have taken place in the sea-salt manufacture. The expansion of the salt industry, which was everywhere accompanied by a great increase in the size of the pans, must have stimulated considerably the demand for iron (cf. above, pp. 296-7).

⁶⁵ The full story of this attempt is well told by Edward Hughes, "The English Monopoly of Salt in the Years 1563-71" in *Eng. Hist. Rev.*, vol. xl, 1925, pp. 334-50. For information concerning the salt industry at Blyth from 1571 until 1605, see *Exch. Spec. Com.*, no. 4347; *A History of Northumberland*, vol. ix, pp. 225-7.

known Wilkes patent,⁶⁶ which superseded that of 1566, the most up-to-date equipment obtainable was installed at Offerton on the Wear by Robert Bowes, one of an old Durham land-holding family, and John Smith, a merchant of King's Lynn, backed by the third Earl of Huntingdon.⁶⁷ Soon after, another work was set up at Seaton Delaval by members of the Delaval family, who contracted to sell the produce of their pans to John Lyons and his partners.⁶⁸

While the salt manufacture thus became an established industry at Sunderland on the Wear, and while it flourished for a short period towards the end of the seventeenth century at Blyth, Hartley, Cullercoates, and Seaton Delaval on the Northumberland coast, the great centre throughout the period from about 1580 until after 1700 was Shields, at the mouth of the Tyne⁶⁹ "Here . . . are the vastest salt works I have seen", wrote in 1636 Sir William Brereton, who had set out on his travels fresh from experience of this manufacture in his native Cheshire. And, he added, "here is such a cloud of smoke as amongst these works you cannot see to walk".⁷⁰ Many years later, Defoe told how he saw the smoke from these same fires "ascend in huge Clouds over the Hills, four miles before we came to Durham, which is at least sixteen Miles from [Shields]"; and how, as he approached Berwick and looked back over his shoulder, he could still see it 40 miles to the south.⁷¹ Recorded shipments of salt from the Tyne to English ports did not apparently exceed 300 or 400 weighs in the year 1561;⁷² but, during the Commonwealth period, they averaged more than 6,000 weighs per annum,⁷³ although many of the pans at Shields are said to have been then given up, owing to Scottish competition, which was stimulated by Cromwell's repeal of the preferential duties against the import of Scotch salt into England.⁷⁴ By 1605, the yearly output of the entire industry in Durham and Northumberland had reached 7,600 weighs.⁷⁵ After the incorporation in 1635 of the "Society of Saltmakers",

⁶⁶ The following are a few of the documents which deal with this patent. *Lansdowne MSS.*, 59, nos. 66, 67, 68, 69, 70, 73, nos. 48, 49, 74, no. 4, *Exch. Spec. Com.*, no. 2651

⁶⁷ H. M C, *Report on the MSS. of the Marquis of Salisbury*, vol. v, p. 526

⁶⁸ *Waterford MSS.*

⁶⁹ An attempt was made at the end of the sixteenth century to manufacture salt from sea water at Hull, Yarmouth, King's Lynn, and Southampton, but works set up near these ports were never very successful. The pans on the Hampshire coast produced some salt during the reigns of James I and Charles I (*Star Chamb. Proc.*, *James I*, 171/21, *Exch. Deps.* by *Com.*, 7 *Charles I*, Trin. 1)

⁷⁰ Sir W. Brereton, "Travels in Holland, England, Scotland and Ireland, 1634-5", in *Publications of Chetham Society*, 1844, vol. 1, p. 88.

⁷¹ Defoe, *Tour*, 1769 ed., vol. iii, pp. 237, 299

⁷² Shipments of salt for six months from February 2nd to July 31st, 1561, amounted to 183 weighs (*Exch. K R Customs Accounts*, 111/4)

⁷³ 6,051 weighs in 1652, 6,101 weighs in 1655 (*Exch. K R. Port Bks.*, bdl. 192).

⁷⁴ *Discourse concerning the Salt workers . . . of Durham and Northumberland*, temp. Charles II (*Lansdowne MSS.*, 253, no. 17). This document is printed in M. A. Richardson, *Reprints of Rare Tracts*, 1847-9, vol. iii.

⁷⁵ Brand, *History of Newcastle*, vol. ii, p. 22 (cited Welford, *Hist. of Newc. and Gateshead*, vol. iii, p. 171). Brand cites a contemporary letter of the Earl of Northumberland (now among the MSS. of the Duke) concerning the salt trade. According to this letter there were 153 salt pans in Durham and Northumberland, each of which produced about 50 weighs per annum.

and before the Civil War, the works at Shields alone turned out between 14,000 and 15,000 weighs annually, and those at Sunderland an additional 1,200 weighs.⁷⁶ Towards the end of the seventeenth century the total production from all the pans in both Durham and Northumberland probably reached 25,000 weighs.⁷⁷

A record of progress no less remarkable is found in the history of the manufacture of salt from sea water on the Firth of Forth. In the decade 1550 to 1560 only £17 17s. 6d. was collected in customs on exported salt; but in the decade 1570 to 1580 the revenue had risen to £1,195, notwithstanding an additional premium put on smuggling by legislation to discourage shipments abroad.⁷⁸ Salt making, like coal mining, rapidly became one of the chief occupations of the inhabitants; and all along both banks of the Firth of Forth for seventy miles, from beyond Musselburgh round to Pittenweem, one could see clusters of small iron pans with their clouds of dirty, brownish smoke, so typical of the budding industrialism of the north. In no one spot were as many pans concentrated as at Shields; but, on the other hand, there were many more centres here than in Durham and Northumberland, and Brereton, who had commented on the manufacture at Shields before he had visited Scotland, observed that the output "cannot be estimated and guessed, because the works are not easily to [be] numbered". There were, he declared, "all along the shore at least thirty English miles from beyond Musselborough almost to Sterling,

⁷⁶ Sir Lionel Maddison to Sir Henry Vane, from Newcastle, November 6th, 1644 (*Cal. S.P.D.* 1644-5, pp. 93-9). It is said that the output of salt fell off during the monopoly of the Society of Salt Makers (Davies, *An Answer to . . . the late Patentees of Salt*, 1641, p. 10, as cited by Scott, *Joint-Stock Companies*, vol. ii, p. 470); but, as Davies was an ardent opponent of the Society, it is possible that his zeal in attacking it may have led him to exaggerate the depression. He agrees with Maddison that at one time before the Civil War an annual output of 15,000 or more weighs was obtained at Shields. On the Society of Salt Makers of South and North Shields, see Gardiner, *History of England*, vol. viii, pp. 284-5; Scott, *op. cit.*, vol. 1, pp. 209-10, 216-17, 219, 221-2, and vol. ii, pp. 468-70. C. T. Carr, *Select Charters of Trading Companies* (Selden Soc., vol. xxviii, 1913), pp. 142-8, 167-72.

⁷⁷ The output at Shields still amounted to about 15,000 weighs per annum, when Lord Harley visited the pans in 1725 (*H.M.C. Report on MSS. of the Duke of Portland*, vol. vi, p. 105). He says that there were at South Shields about 200 pans, and others on the north side of the Tyne, each of which "makes two tuns and a half of salt" in a week. He adds, "the whole annual produce of these pans at Shields, etc., is about one hundred and fifty thousand pounds per annum". But this is obviously a mistake, it is quite impossible that, if the weekly output of one pan was two and a half tons, the annual output of more than 200 pans was only 67 tons. It is possible that Lord Harley was referring, not to the weight, but to the annual value of the product. Since the industry at Shields is said to have reached a peak of prosperity about 1686 (R. Surtees, *History of Durham*, 1816-40, vol. ii, p. 95), and to have declined steadily thereafter (*A History of Northumberland*, vol. viii, p. 21, and see below), we are perhaps justified in assuming that the output may have been somewhat larger at the end of the seventeenth century than in 1725. At Cullercoates in 1708 the annual production exceeded 2,000 weighs (*ibid.*, vol. viii, pp. 281-3), and the production at Sunderland, Blyth, Hartley, or Seaton Delaval may have been as large as at Cullercoates. Therefore, 25,000 weighs is probably not a high estimate for the total output of Durham and Northumberland at the end of the seventeenth century.

⁷⁸ Edward Hughes, *op. cit.*, in *Eng. Hist. Rev.*, vol. xl, p. 349, note. On the state of the salt manufacture in Scotland by 1578 see Bishop Leslie, "The South Countreyis of the Realme", in P. Hume Brown, *Scotland before 1700*; and also *Privy Council Register of Scotland*, 1st Series, vol. ii, pp. 442-3.

an infinite innumerable number of them".⁷⁹ Had he visited Fife, he would have found salt works in similar abundance along the north shore of the Firth of Forth as far east as St. Andrews. The output may well have exceeded that in the north of England, because for most uses Scotch could regularly undersell English salt in the English market, unless handicapped there by a high duty. In spite of such a duty, it would appear that more than 8,000 weighs of Scotch salt per annum reached England in the years immediately preceding the Civil War,⁸⁰ at a time when, according to Brereton, "the greatest part of [Scotch] salt . . . is transported into Holland".⁸¹

Besides the works in Durham and Northumberland and on the Firth of Forth, there were before 1700 other less important centres for manufacturing salt from sea water at various places on the Scottish and English coasts: notably at Brora in Sutherland, at Saltcoats in Ayrshire, at Whitehaven in Cumberland, and along the Dee Estuary in Flint and Denbighshire.⁸²

In 1670 a searcher for seacoal hit upon a rock of salt in Cheshire.⁸³ His discovery caused an immediate rush to exploit the new mineral, which was soon after found in several other counties, and before 1700 a rock salt manufacture had developed, considerable enough to offer serious competition to the brine and sea salt makers,⁸⁴ a competition destined within another half century effectively to ruin them both.

This brief historical survey of the industry suggests that, during the hundred and fifty years which followed the accession of Elizabeth, the position of Great Britain with reference to salt underwent a revolutionary change. In the reign of Henry VIII, when the annual consumption of England and Wales amounted to some 40,000 weighs, or about 40,000 tons, from two-thirds to three-fourths of the supply had to be purchased abroad.⁸⁵ But on the eve of the Civil War, it is probable that about 40,000 tons per annum were produced on the coasts of Durham and Northumberland and the shores of the Firth of Forth alone, besides a very greatly increased quantity at the midland wicles. The reigns of Elizabeth and

⁷⁹ Brereton, *op. cit.*, pp. 98, 112. According to Maddison there were 222 pans at the mouth of the Tyne before 1640, of which from 180 to 190 were usually in operation. On the Firth of Forth the greatest concentration was at Culross, where there are said to have been 50 pans working in 1663 (Sir John Sinclair, *Statistical Account of Scotland*, vol. x, p. 144). There may have been as great a difference between grades of salt as between grades of coal, but time has not permitted me to investigate the question.

⁸⁰ Carr, *op. cit.*, p. 170.

⁸¹ Brereton, *op. cit.*, p. 112.

⁸² Robert Chambers, *Domestic Annals of Scotland*, 1858, vol. 1, p. 302; *Acts of the Parliaments of Scotland*, vol. viii, p. 609, *V C H. Cumberland*, vol. ii, p. 359

⁸³ John Collins, *Salt and Fishery*, 1682, p. 4

⁸⁴ *The Case of the Rock Salt as it now stands Burthen'd with a Higher Duty than the other sort of English made Salt; The Case of the Refiners of Rock Salt in Lancashire, Cheshire, and Flintshire; The Case of the Brine-Pits Truly Stated; The Case of Rock Salt, considered in relation to a Clause now depending, for prohibiting the Refining thereof at any places, but near the Rock-Pits; Objections against the Rock Salt answered; A reply on behalf of Rock Salt and Refineries* (all written about 1699), see also Scott, *op. cit.*, vol. ii, p. 470.

⁸⁵ Edward Hughes, *op. cit.*, p. 334.

James I appear to have been the period of most rapid expansion in the brine and sea salt industries. After the Restoration, progress was maintained. By the nineties of the seventeenth century, when Houghton estimated the annual consumption of England and Wales at 130,000 tons,⁸⁶ a considerable portion of the supply was still, it is true, imported,⁸⁷ but the imports must have been very nearly balanced by Scottish exports to Holland, and English west-coast exports to Ireland. Taking England and Scotland together, one may estimate very tentatively the annual yield of brine salt at from 30,000 to 40,000 weighs,⁸⁸ and the yield of sea salt at from 60,000 to 80,000 weighs.⁸⁹ In addition, some quantity of rock salt was being produced by this time. The total output of all kinds of salt in Great Britain could hardly have been less than 100,000 tons, and it may have been considerably more than this. It had been a principal aim of Tudor and Stuart governments to make the country independent of foreign supplies of a commodity so essential in packing meat, preserving fish, butter, cheese, and eggs, in an era when the slowness of transport made such preservation most important.⁹⁰ That aim had been achieved, though probably less as a consequence of the protective policy pursued by successive governments,⁹¹ than because of the natural advantages afforded for salt making by cheap supplies of coal.⁹²

The development of the English and Scottish glass industry, which was also facilitated by the increasing output of coal, is less easily measured by statistics, but it was, in all probability, no less remarkable. Records of the glazier's work are scarce during the Middle Ages, and they refer mainly to ovens in the Chiddingfold district of Surrey and Sussex.⁹³ But this, in itself, is no proof of the absence of glass makers elsewhere. Research frequently shows that industrial processes, like ideas, have an older history than that which tradition has assigned them, and that the

⁸⁶ Houghton, *Husbandry and Trade*, vol. 11, pp. 75-6. "I rather think we use more [than 130,000 tons]", writes Houghton. In another place, he speaks of 53,248 weighs as "all the salt was known to be made in, and imported into England and Wales" from March 25th, 1695, to March 25th, 1696 (*ibid.*, pp. 104-5). The discrepancy is perhaps to be explained by the fact that it was not possible to obtain figures concerning the output of most of the English manufactures. But it should be pointed out that there are also objections to the larger estimate. This is based on the assumption that each family used four bushels per annum, which is of course a guess, and Houghton's figure for the total population was higher than the one which is now usually accepted.

⁸⁷ Perhaps 25,000 weighs. In the year from Mich., 1685, to Mich., 1686, the recorded imports of French salt at English ports amounted to nearly 17,000 weighs (Charles King, *The British Merchant*, 1743 ed., vol. 1, pp. 257, 262).

⁸⁸ 20,000 to 25,000 weighs in Cheshire, 10,000 to 20,000 weighs in Worcestershire.

⁸⁹ 25,000 weighs in Northumberland and Durham, 25,000 to 35,000 weighs in the Firth of Forth district, 10,000 to 20,000 weighs at all other places on the Scottish and English coasts.

⁹⁰ The fishermen were apparently the chief customers of the salt makers at Shields (*S P D.*, *Charles I*, vol. ccxxxix, no. 109.)

⁹¹ Cunningham, *Growth of English Industry and Commerce, Modern Times*, 1921 ed., pt. i, pp. 229, 309, *Reasons for laying a further Duty upon French, Spanish and other Foreign Salt*, (?) 1699.

⁹² Davies wrote that foreign salt was cheap, because it was cheaper to evaporate salt water by the sun than by coal fires (*An Answer to the Patentees*, p. 11). This was doubtless true in southern France, where conditions were favourable, but not in Great Britain (see below, p. 332).

⁹³ Salzman, *English Industries of the Middle Ages*, pp. 183 sqq.

word of a commentator is no more likely to reveal the true origin of an industry, than the stamp of a government patent that of an invention. It has been categorically asserted that no glass was made in the Tyne valley before 1615,⁹⁴ yet the Newcastle Corporation received a small revenue from the export of glass as early as 1574.⁹⁵ Again, it has been assumed that, until the very end of the sixteenth century, all glass vessels were imported from abroad;⁹⁶ but Mr. Salzman refers to a contract made in 1380 for producing such articles in Surrey, and the operators of a glass furnace at Falkland in Scotland sold in 1506 and 1507—among other things—a number of flasks.⁹⁷

In spite of this evidence of an earlier activity, it is unlikely that any great quantity of glass was made in England or Scotland before the reign of Elizabeth. Until the sixteenth century, this commodity had been in little demand for the common people, who had neither glass mirrors, nor glass cups, nor glass windows. To a far larger extent than metal, glass remained an article of luxury and artistic display. Apart from its place in the castles of the nobility, it had been used chiefly to adorn the stately windows of medieval cathedrals. Much of the labour of glass making then concerned the planning of patterns, and the forging of deep blues and reds or fiery whites. That perhaps explains the high rank given to English painted glass by Vasari, who considered it the best produced in his time.⁹⁸ Not by accident did glass making come within the purview of the illustrious author of the *Lives of the Painters* rather than within the speculative dealings of a Florentine financier; for, like goldsmiths' work, it was still more an art than a manufacture, and the spirit in which glass had been produced was that of the creator rather than of the merchant.

During the sixteenth century, glass first became an object of common use in England. The spread of civilization brought the apothecary's bottle and the test tube of the natural scientist. Spectacle makers appeared among the London companies.⁹⁹ Even modest householders clamoured for glass windows. Glass mirrors, reputed to have been devised by Venetians in the fourteenth century, were introduced in London residences and in the houses of the country gentry. Glass drinking goblets, and vessels for all purposes, replaced the old stone cups, not only in aristocratic mansions but in cheap inns and ale houses.¹⁰⁰ "The poorest", wrote Har-

⁹⁴ A. Hartshorne, *Old English Glasses*, 1897, pp. 177-8.

⁹⁵ *Newcastle Corporation MS. Account Bks*, 1574-80. The port books also show that glass was exported from the Tyne before 1615 (*Exch. K.R. Port Bks.*, 187/5). Bourne (*History of Newcastle*, 1736, p. 155) was probably justified, therefore, in asserting that some of the Lorraine glass makers set up a furnace at Newcastle during Elizabeth's reign. Sidney Grazebrook (*Collections from the Genealogy of the Noble Families of Henzey, Tytterby and Tyzak*) disputes Bourne's assertion (see Welford, *History of Newcastle and Gateshead*, vol. iii, p. 208).

⁹⁶ Hartshorne, *op. cit.*, p. 147.

⁹⁷ Salzman, *op. cit.*, pp. 185-6; *Accounts of the Lord High Treasurer of Scotland*, vol. III, pp. 161, 194.

⁹⁸ Hartshorne, *op. cit.*, p. 160.

⁹⁹ Unwin, *Gilds and Companies of London*, p. 293.

¹⁰⁰ Hartshorne, *op. cit.*, pp. 157, 191-2.

rison in 1586, "also will have glasse, if they may, but sith the Venetian is somewhat too dear for them, they content themselves with such as are made at home".¹⁰¹

To meet these new demands the native glass industry necessarily became commercial. A preliminary attempt to establish in Surrey and Sussex a large manufacture of a more practical nature, with the aid of the so-called *gentilshommes verriers* from Lorraine, met with no more immediate success than had Cecil's scheme for importing German skilled labour for the early saltworks on the east coast,¹⁰² and, indeed, one may observe many parallels between the development of these two industries during the sixteenth and seventeenth centuries. "As for glass makers", says an anonymous writer in 1577, "they be scant in this land".¹⁰³ Henceforth, however, they increased rapidly in numbers, and achieved an ever more skilful mechanical technique. Before 1620 furnaces for turning out glass on a large commercial scale had been successfully established, not only in the original home of this industry in the Chiddingfold region, but in London and Newcastle-on-Tyne, at Stourbridge in Worcestershire, at Wollaton and Awsworth in Nottinghamshire, at Wemyss in Fife, at Leith in Midlothian, and even in commercially backward Ireland—to mention only a few of the most important.¹⁰⁴ Under a well-known patent of 1615, the Crown gave a monopoly of this manufacture in England to a group of Court favourites, among whom the most influential was Sir Robert Mansell, the notorious admiral who soon bought out all his partners.¹⁰⁵ In the face of strong and vocal opposition from independent glass makers, Mansell maintained his monopoly (at least in law) until the Civil War.¹⁰⁶ His principal houses were in London and Newcastle, but he apparently made agreements with rival proprietors whereby furnaces continued to operate in Nottinghamshire and at Stourbridge, and probably

¹⁰¹ *Description of England*, 1586 ed., p. 167.

¹⁰² The project referred to in the text did not, strictly speaking, bring about the first migration of foreigners to teach the English glass making. Some Venetian glaziers spent the years from 1549 to 1551 in England and imparted a certain amount of their technique to the natives (Hartshorne, *op. cit.*, pp. 147 sqq.). The story of the Lorraine glass makers has been fully told by Hartshorne (pp. 152 sqq.) and by Hyde Price (*English Patents of Monopoly*, 1906, pp. 67–70). Three of the documents on which both accounts are based (*Lansdowne MSS.*, 59, nos. 72, 75, 76) have been printed by Hartshorne in appendices.

¹⁰³ Cited Galloway, *History of Coal Mining*, 1882, p. 37.

¹⁰⁴ Hartshorne, *op. cit.*, pp. 174–5, 177–8; S.P.D., *James I*, vol. clxii, no. 63 (printed Hartshorne, pp. 426–31). Galloway, *op. cit.*, p. 38, *V.C.H. Worcestershire*, vol. ii, pp. 278–9, *H.M.C. Report on the MSS. of Lord Middleton*, pp. 181–2, 499–501, *Privy Council Reg. of Scotland*, 1st Series, vol. xii, pp. xv–xvi, 374, 428, 439, 440, 451–2, 481, 760, 772; *Dennistoun MSS.*, vol. ix, no. 13; *Lansdowne MSS.*, 59, no. 72, R. R. Steele, *Bibliog. of Tudor and Stuart Proclamations*, vol. ii, no. 265, and *Exch. Dpts. by Com.*, 16 James I, East. 12. The last two documents prove that glass works were operated in Ireland in the reign of James I.

¹⁰⁵ Several writers have investigated the Mansell patent. For the account given in the text I have made use of the following: Gardiner, *History of England*, vol. x, see index; Hartshorne, *op. cit.*, pp. 187 sqq., 426–33, Price, *op. cit.*, pp. 71–3, *V.C.H. Surrey*, vol. ii, pp. 301 sqq.; Galloway, *History of Coal Mining*, pp. 37–8, *Additional MSS.*, 12496 ("Reasons for defence of the glass patent", December 21st, 1621).

¹⁰⁶ The patent was renewed in 1635 for a period of 21 years (Steele, *op. cit.*, no. 330).

elsewhere as well.¹⁰⁷ At the same time, he employed every method he could find to crush less accommodating competitors,¹⁰⁸ and in 1639 he succeeded in procuring a proclamation to prohibit all further manufacture in Ireland.¹⁰⁹ But he was never able to suppress his far more formidable rivals at Leith, nor to have legislation passed against the import of Scotch glass into England.¹¹⁰ Most of the glass produced by Mansell at Newcastle was shipped in cases to other ports; and a considerable amount must have gone to independent glaziers, spectacle makers, hour-glass makers, and others, to be worked into finished articles, although Mansell said that he also sold window glass, beer and wine tumblers, looking-glasses and spectacles direct to consumers.¹¹¹ The quality of his output was much criticized,¹¹² and modern authorities generally hold—with a substantial show of reason—that his patent proved a hindrance, rather than an aid, to the development of a native manufacture.¹¹³ During the Commonwealth period the recorded shipments of glass from the houses which he had been forced to abandon at Newcastle¹¹⁴ did not exceed 3,000 cases—300 tons—per annum,¹¹⁵ a quantity which he had claimed to exceed as early as

¹⁰⁷ H.M.C., *Report on the MSS. of Lord Middleton*, p. 500 (Sir Percival Willoughby leases to Sir Robert Mansell (December 8th, 1615) a barn, to be used for glass-works), *VCH Worcestershire*, vol. ii, pp. 278–9. An order of the Privy Council, of April 3rd, 1616, authorized Isaac Bungard and Edward Henzey to continue their manufacture of broad glass in Surrey, in spite of Mansell's patent. They were, however, to abandon the enterprise as soon as they had used up the materials which they then had on hand (*Acts of the Privy Council*, 1615–16, pp. 469–70).

¹⁰⁸ *Ibid.*, pp. 471–2, April 3rd, 1616. Warrant to John Brunte to stay glass works erected in Devonshire, Staffordshire, and North Wales contrary to the patent Price (*op. cit.*, p. 73, note) gives references to a great number of similar cases (investigated by the Privy Council between 1618 and 1625) concerning infringements of the Mansell patent.

¹⁰⁹ Steele, *op. cit.*, vol. ii, no. 330

¹¹⁰ In 1619 it was ruled that Scotch glass came within the meaning of the term "foreign" in the act of 1615 (*ibid.*, no. 1164), which forbade the importation of all foreign glass into England. This ruling led the Scottish Privy Council to address to the King a vigorous protest (*Dumbarton MSS.*, vol. ix, no. 13), and to threaten to retaliate by prohibiting the export of Scotch coal, then used in the furnaces of the London glass makers (*ibid.*, vol. ix, no. 23). Immediately after this threat, a new proclamation was passed (February 25th, 1619–20), exempting Scotch glass from the embargo on imports (Steele, *op. cit.*, no. 1273).

¹¹¹ *The True State of the businesse of Glass of all kinde*, 1641.

¹¹² See "Reasons against Mansell's Patent", 1624 (*S.P.D.*, James I, vol. cxii, no. 64, printed Hartshorne, *op. cit.*, pp. 423–6). See also *Cal. S.P.D.*, 1619–23, pp. 323, 330 (attacks on the patent in the House of Commons by Mansell's rivals, John Worrall and Isaac Bungard, etc.), and pp. 129–30 (petition of Ralph Colbourne, hour-glass maker, to be relieved from oppression at the hands of Mansell). The London Glaziers Company, on the other hand, defended the quality of Mansell's glass (*ibid.*, pp. 243, 247).

¹¹³ This is Price's view (*op. cit.*, pp. 74–5). But Hartshorne (*op. cit.*, p. 187) thinks that the granting of this monopoly was a "wise and statesmanlike step" which saved glass manufacture from decay in the hands of "mere lawless artisans".

¹¹⁴ An entry of August 12th, 1653, in the *MS. Journal of the Common Council of Newcastle*, vol. for 1650–60, f. 141, refers to a lease to a Mr. Moyer of one of the glass houses formerly rented by Mansell. In 1658 all three of Mansell's houses were taken over by a partnership consisting of Robert Tainton, Wm. Pollicott, and others (*ibid.*, f. 480). How many years before 1653 Mansell gave up these works is uncertain, though we know from his own statement to Secretary Windebank (*Cal. S.P.D.*, 1640–1, p. 65; Hartshorne, *op. cit.*, p. 200), that the Scottish invasion of 1640 forced his workmen to flee, leaving 1,200 cases of glass ready for shipment. Doubtless, they returned later. Mansell, according to the *Dictionary of National Biography*, died in 1656 at the age of 83, but the entry of 1653 in the *Journal of the Common Council* refers to him as already dead. The glass patent was not revived after the Restoration.

¹¹⁵ 2,706 cases were shipped in the year 1655 (Exch. K.R. *Port Bks.*, 192/9). Ten cases made a ton at Wollaton in 1615 (*H.M.C., Report on MSS. of Lord Middleton*, pp. 500–1). This glass then sold in London at 16s. per case; in 1640 Mansell valued his window glass at £1 5s. per case (*Cal. S.P.D.*, 1640–1, p. 65).

1624.¹¹⁶ But trade from Newcastle in the early 'fifties had not recovered from the depression caused by the Civil War.

Whatever may have been the course of production during the years when Mansell held the glass patent, it is certain that the manufacture of glass in England increased very rapidly between 1580 and 1615, and that it increased again after the Civil War. Under Mansell only three furnaces had been operated at Newcastle; in 1696 there were eleven.¹¹⁷ According to an estimate made in 1589 by George Long, who petitioned for the right to start a manufacture in Ireland, there were fifteen glass furnaces in the whole of England,¹¹⁸ several of which appear to have been started within a decade of the time when Long wrote. In 1696 Houghton put the number of furnaces at 90, the majority of which were probably capable of turning out a far greater amount of glass than had been possible with an Elizabethan furnace.¹¹⁹ In addition, the manufacture at Leith on the Firth of Forth rivalled that of the great English glass making centres, London, Stourbridge, Newcastle, and Bristol, both in the quality of its green bottles, chemists' and apothecaries' glasses, and in the quantity produced. As a furnace at Wollaton, in Nottinghamshire, produced about 800 cases a year in 1615, and a furnace at Newcastle during the Commonwealth about 1,000 cases, it seems probable that the annual output of glass in England and Scotland at the end of the seventeenth century may have exceeded 100,000 cases, or 10,000 tons.¹²⁰ Probably not a fifteenth as much glass had been produced before Elizabeth's reign. In a little more than a century, Great Britain had changed from a country almost altogether dependent upon foreign glass for commercial uses, to a country producing more commercial glass than could find a market at home.¹²¹ It was no longer a question, as in Harrison's time, of being "content" with the native product, for most English glass now equalled in quality any made abroad, and a finer type of crystal glass was turned out in England than has ever been produced elsewhere.¹²² That such proficiency in making vessels to ornament the tables or sideboards of rich gentlemen should be obtained at the expense of losing the art which is written in the windows of Fairford Church scarcely concerned the mer-

¹¹⁶ 3,000 to 4,000 cases annually (*S P D.*, James I, vol. clxii, no. 63, printed Hartshorne, *op. cit.*, pp. 426-31. A defence of Mansell's patent)

¹¹⁷ *Cal. S.P.D.*, 1640-1, p. 65, Houghton, *Husbandry and Trade*, vol. ii, p. 48.

¹¹⁸ *Lansdowne MSS.*, 59, no. 72 (Petition to Burghley). Long had an interest in exaggerating the number of furnaces in England, for, in order to further his project to establish an Irish manufacture, he wished to impress Burghley with the havoc wrought by English glass houses on the native wood supply (cf. below, pp. 319, 321).

¹¹⁹ Houghton, *op. cit.*, vol. ii, pp. 48-9. Not all the furnaces were at work

¹²⁰ The output at Wollaton in 1615 is given in *H.M.C., Report on the MSS. of Lord Middleton*, pp. 500-1. The output at Newcastle is an estimate, based on the knowledge that there were three furnaces in the town and that the exports of glass amounted to approximately 3,000 cases a year. It seems probable that before the end of the seventeenth century, some of the furnaces may have produced much more than 1,000 cases annually.

¹²¹ In the year ending Michaelmas, 1686, 15,750 glass bottles were exported to France (Charles King, *The British Merchant*, 1743 ed., vol. i, p. 276).

¹²² Hartshorne, *op. cit.*, p. 184.

chants who financed these new furnaces, and whose object was to sell their produce in as large quantities as possible. As in the case of the salt manufacture, the command which the native manufacturers obtained over the domestic market was undoubtedly due to the advantage they possessed in getting cheap supplies of fuel, rather than to the protective policy of the Stuart government¹²³

Everyone must be struck by the parallel development in the three industries just reviewed. In the case of shipbuilding, salt making, and glass manufacture the reign of Elizabeth marks the beginning of a period of far more rapid progress than any which had gone before; and such quantitative evidence as it has been possible to obtain suggests that the increase in output in all three industries, during the period from 1560 to 1700, was only less rapid than the increase in the output of coal. Time has not permitted us to attempt to make similar quantitative estimates concerning the development of other industries. But the evidence at our disposal suggests that the period was one of rapid expansion in the output of most manufactured commodities.

Much has been written by historians about the establishment of "new" processes of manufacture in Elizabethan England, and, while it may be doubted whether the alum and copperas industries, which provided dyers with ingredients indispensable for their trade,¹²⁴ the manufacture of salt-petre and gunpowder, or soap making can properly be described as perfectly novel, it seems clear that the end of the sixteenth century, and the beginning of the seventeenth, saw the first systematic attempt to develop them. Bristol dyers made use of an "Alym de Wyght" as early as 1346, so that it is inaccurate to say that alum stone was discovered in England in Elizabeth's reign.¹²⁵ But there can be no doubt that the dyers had been hitherto largely dependent upon "Romish" alum. The development, during the reign of James I, of important alum works, near the supply of newly found alum stones on the Yorkshire coast, and at Hartlepool in Durham, was a long step towards relieving England from its dependence upon foreign supplies. Much Italian alum was still smuggled into the country, notwithstanding proclamations against imports, and this illicit traffic was likely to continue as long as the manufacturers persisted in their policy of subsidizing the export of alum, by charging a higher price for their product at home than abroad. But the failure of the early patentees was not followed by a failure of the industry. There is abundant evidence in the port books of Whitby, Hartlepool, and Sunderland that the alum works along the north-east coast produced alum in increasing

¹²³ See below, pp. 344-6.

¹²⁴ The chief use of alum was to fix and render dyes more beautiful. It was also used in making gold ware and paper. Copperas was useful in dyeing black, and also as an ingredient in the preparation of writing ink.

¹²⁵ Salzman, *English Industries of the Middle Ages*, p. 208. For the reference to the discovery in Elizabeth's reign, see *S.P.D.*, *Eliz.*, vol. xxxvi, no. 72.

quantities during the seventeenth century.¹²⁶ And, before the Civil War, we hear also of a large plant at Queenborough in Kent for the manufacture of copperas.¹²⁷ The output of alum and copperas in 1655 was already worth about £50,000 a year.¹²⁸

Charcoal, brimstone, and saltpetre are required for making gunpowder, and, of the three, saltpetre is by far the most important ingredient. It is generally assumed, though we do not know whether the assumption is justifiable, that no gunpowder had been manufactured in England before the establishment of a mill in Surrey in 1554 or 1555. The strategic importance of adequate native supplies of both gunpowder and saltpetre was soon realized by advisers of the Crown, who did what they could, by attempting to shut out foreign supplies, and by declaring a royal monopoly over the collection and preparation of saltpetre, to encourage the native industry. The most famous mills for making gunpowder were those of the Evelyn family at Long Ditton, founded by George Evelyn in Elizabeth's reign, but before the reign of Charles I there were others in England, especially in the neighbourhood of London, and in Scotland. At first these mills probably depended on supplies of Indian saltpetre. But the so-called commissioners for saltpetre had planned a considerable manufacture at least as early as 1588.¹²⁹ Armed with a royal warrant, their agents ruthlessly entered private holdings in all parts of the country, to search the incrustations of old buildings for the material requisite for their trade. By 1591, London was receiving supplies from Hull; and henceforth the industry developed rapidly in many parts of England, and, somewhat later, in Scotland.¹³⁰

Soap making had not been an important native industry before the reign of Elizabeth; and there is no doubt that the growth of textile manufactures had been handicapped by the lack of a commodity so essential in scouring the wool before it could be made into cloth. In the thirties

¹²⁶ *Exch. K.R. Port Bks.*, 148/3, 4, 16; 200 For the history of the early English alum manufacture see J. Beckmann, *History of Inventions*, vol. i, 1797, pp. 184–96, Hyde Price, *The English Patents of Monopoly*, pp. 82–101, Sombart, *Der Moderne Kapitalismus*, 1916, vol. ii, p. 878, W. Cunningham, *History of Industry and Commerce, Modern Times*, 1921 ed., pt. 1, p. 293, W. R. Scott, *Joint-Stock Companies*, vol. ii, pp. 475–6, V.C.H. *Yorkshire*, vol. ii, p. 384 Among the very extensive source material I have met with, mention may be made here of *Lansdowne MSS.*, 152, which is practically devoted to the alum industry, *Exch. Dps. by Com.*, 9 Charles I, Mich. 11, and 11 and 12 Charles I, Hilary 17, *Exch. Spec. Com.*, nos. 2684, 4465, 5789, 6548, *Star Chamb. Proc.*, *James I*, 30/18, *S.P.D.*, *James I*, vol. lxxiv, nos. 19–21.

¹²⁷ Sir William Brereton, *op. cit.*, p. 2 Copperas was certainly manufactured in England as early as 1593 (*S.P.D.*, *E172*, vol. ccxlii, no. 65)

¹²⁸ *S.P.D.*, *Interregnum*, vol. xciv, no. 106.

¹²⁹ *Lansdowne MSS.*, 58, no. 63, *Harleian MSS.*, 1926, no. 118.

¹³⁰ *Exch. K.R. Port Bks.*, 9/3. On the saltpetre and gunpowder industry see Beckmann, *op. cit.*, vol. ii, pp. 487 sqq., 509 sqq., Cunningham, *op. cit.*, pp. 60–1, 291, *V.C.H. Surrey*, vol. ii, p. 246; John Evelyn, *Misc. Works*, 1825, p. 689; *Dict. Nat. Biog.*, under John Evelyn, Scott, *op. cit.*, vol. ii, pp. 471–2, Agricola, *De Re Metallica*, ed. Hoover, pp. 561–4, *Privy Council Reg. of Scotland*, 1st Series, vol. x, p. 82, and vol. xi, pp. 275, 306, 322, 2nd Series, vol. i, p. 377, and vol. ii, pp. xxxii–iii, 333–4, *Acts of the Privy Council*, N.S., vol. xi, pp. 246, 249, *S.P.D.*, *Charles I*, vol. clxxx, nos. 8–15, vol. cccxi, no. 68, vol. cccliv, no. 168, vol. ccclxxvi, nos. 147–154, vol. dxxix, nos. 58, 88, vol. dxxx, no. 45, vol. dxxvi, nos. 43–5, vol. dxxxviii, no. 51, *Cal. S.P.D.*, 1645–7, p. 411, *ibid.*, 1651–2, pp. 253, 256, 274, 285

of the seventeenth century between 5,000 and 10,000 tons of soap was being produced annually for the English market.¹³¹ Before the end of the century it was estimated that about 5,000 tons was consumed in London alone.¹³²

The expansion of the trade in alum and copperas, saltpetre and gunpowder, and in soap, was accompanied by the introduction of tobacco pipe making as an important industry at Broseley, on the Severn, and in London, and by attempts to refine the raw sugar which was brought into the country in increasing quantities from the Colonies.¹³³ Beer brewing, the distillation of spirits, and the preparation of the ingredients used in both assumed a greater importance in the national economy. Hops, once largely imported from Artois, are said to have been first planted in England in 1524. By 1700, the preparation both of hops and malt¹³⁴ had reached a higher degree of perfection at home than anywhere on the Continent.¹³⁵ The country was now independent of foreign trade for nearly every kind of drink except wine, and certain native beverages, such as Dorset beer or Bristol "milk", were thought to rival the most delicious draughts to be obtained abroad.

While the introduction of a number of new, or quasi-new, processes resulted in the development of manufactures, some of which had scarcely existed in Great Britain before the sixteenth century, conditions within the country were bringing about a great increase in the amount of manufacturing done in connection with two of the most ancient industries, building and textiles. If the rising price of timber encouraged the substitution of lead for wooden roofs, it offered an even greater encouragement to the erection of houses built partly of brick and stone and mortar, instead of wood. Harrison commented on the change in building materials that had taken place during his lifetime.¹³⁶ As a result of the change, two manufactures, those of brick and lime, assumed an importance out of all proportion to that which they had possessed when stone construction work had been largely reserved for the great cathedrals and the castles of rich landowners. Brickmaking became the constant occupation of considerable numbers of workmen, and the limekilns were not only set up in towns, but were scattered in increasing numbers over the countryside. For lime was also wanted in ever greater quantities to nourish arable ground, now that the advantages of artificial fertilization were beginning

¹³¹ Gardiner, *History of England*, vol. viii, pp. 71-3; S P D., *Charles I*, vol. cclxxix, no. 72.

¹³² Houghton, *Husbandry and Trade*, vol. i, pp. 349-50.

¹³³ On pipe-making, see *V C H Shropshire*, pp. 440-1, and below, p. 343. In spite of the effort made to develop sugar refining in England and Scotland, at least a third of all sugar imported from the Colonies, at the end of the seventeenth century, was re-exported raw (G. L. Beer, *Commercial Policy of England towards the American Colonies*, 1893, p. 56).

¹³⁴ For the improvement in the quality of malt, see below, pp. 341.

¹³⁵ Beckmann, *op. cit.*, vol. ii, pp. 384-6.

¹³⁶ Harrison, *Description of Britain*, 1577, bk. ii, chap. x Cf Owen, *Description of Pembroke-shire*, p. 76, Sombart, *op. cit.*, vol. i, p. 775; F. J. Furnivall, *Harrison's Description of England* (New Shakspere Soc., Series vi, no. 5), p. xlvi.

to be understood.¹³⁷ Before 1700 nearly all husbandmen, even in remote districts where a primitive economic life still prevailed, had to have a good supply of lime "for manuring [their] . . . lands and [for] the reparacons of their several tenements".¹³⁸ Every large farm had its kiln. We have only to read contemporary treatises on husbandry, and accounts of travellers or discourses of natural scientists, to be convinced that lime was becoming a product of rapidly increasing importance throughout the seventeenth century.¹³⁹

Materials are not available with which to measure even roughly the rate of growth in the textile industries. To-day the generally accepted view is that they have increased in magnitude from the thirteenth or fourteenth centuries down to the present day, and that progress was steady but relatively slow until 1660, when the jog trot becomes a gallop, to turn into a race in the period of the Industrial Revolution. There can be little doubt that the progress of woollen cloth manufacture differed from that of most of the industries discussed in this chapter. In the Middle Ages its relative importance was much greater. Records of cloth exportation suggest that the woollen industry developed rapidly between the middle of the fourteenth and the beginning of the sixteenth centuries.¹⁴⁰ But it would be a mistake to assume, because the growth in exports of cloth during the late sixteenth and seventeenth centuries was less striking,¹⁴¹ that the progress in clothmaking had slackened. It is not in the export trade that we are likely to find a full reflection of the growth of industrial enterprise during the seventeenth century. Production was carried on above all for the domestic market, which appears to have exhibited new wants, many of which were fulfilled. The last half of the sixteenth and the early years of the seventeenth centuries were evidently a period of great importance for textile manufacture as well as for other industries. When Cunningham made his generalization that England had been successively a great corn-growing, a great wool-raising, and a great coal-mining country, it was the period of the Tudors and Stuarts with which he specially associated the ascendancy of wool, and the earliest historian of the worsted manufacture tells us that the accession of Elizabeth marks "a fresh starting point".¹⁴² A recent authority, speaking for Lancashire, thinks that the closing years of the sixteenth century and the first years of the seventeenth were marked by changes in the textile manufactures second in importance "only to those of the last third of

¹³⁷ Fitzherbert, *Surveyng*, 1539, chap. xxxiv.

¹³⁸ *Star Chamb. Proc.*, Henry VIII, vol. v, f 21.

¹³⁹ *Chanc. Proc.*, James I, C/24/5, HMC, 4th Report, appx., p. 475, b; Thos. Pennant, *Tour in Scotland*, 1771, p. 3, Sinclair, *Statistical Account of Scotland*, vol. i, p. 373, vol. v, p. 346; vol. xii, pp. 102-3, and *passim*; MS. *Journal of the Common Council of Newcastle*, vol. for 1650-60, ff. 469, 484, and *passim*. Some English lime was exported to the Continent as early as Elizabeth's reign, notwithstanding the heavy cost of transport (*Lansdowne MSS.*, 79, no. 90).

¹⁴⁰ A. Friis, *Alderman Cockayne's Project and the Cloth Trade*, 1927, pp. 10-12.

¹⁴¹ H. Heaton, *The Yorkshire Woollen and Worsted Industries*, 1920, p. 258; cf. chap. vi.

¹⁴² John James, *History of the Worsted Manufacture in England*, 1857, pp. 104-5

the eighteenth century".¹⁴³ While the actual growth in the output of cloth was probably slower than that of most other commodities discussed in this chapter, it is not unlikely that certain branches of the textile industries such as dyeing, which must have been stimulated by the progress of alum manufacture, progressed almost as rapidly as glass melting and salt boiling.¹⁴⁴

Whatever may have been the actual course of textile production, it seems certain that the period from 1560 to 1700 was one of unprecedented growth in many industries besides coal mining. By 1700 Britain had already become a country of "manufactures". If one were to take at random a certain number of tracts on economic subjects published between 1550 and 1575, and an equal number published between 1675 and 1700, it is probable that the word "manufacture" would appear ten times in the latter to once in the former. By 1700 some writers had a consciousness of Britain's industrial destiny which is too commonly supposed to have originated with Adam Smith. When the mercantilist doctrine enjoyed the fullest measure of prestige, we find an enlightened—if perhaps ambiguous—thinker urging the importance of "taking off all Restraints, and giving due liberty to Manufacturers and alluring them Home, in encouraging and improving those advantages which are in a manner peculiar to us, in discouraging and clogging those Trades which draw away our Treasure; in keeping a good Correspondence with those Kingdoms and Countries whence we derive Materials for our Manufactures, and those which take off our Natural Products, Manufactures and Artificial Commodities"¹⁴⁵

What is new and significant in this quotation is the proposition that England Shall live, to some extent, on her surplus manufactures. That would have been a purely hypothetical proposition a hundred and fifty years earlier, for then most British industries could only partly supply the home market for finished goods, and, however valiantly statesmen and their advisers might strive to prevent all export of wool, lead, or tin in a raw or half-finished state, such exports were inevitable, if the country was to pay for finished goods imported. The industrial backwardness of Scotland before the seventeenth century is notorious. More than ninety per cent of all articles exported as late as 1614 were either raw or unfinished.¹⁴⁶ "For the country, I must confess it is too good for those that inhabit it and too bad for others to be at the charge of conquering it",

¹⁴³ Wadsworth and Mann, *The Cotton Trade and Industrial Lancashire*, 1931, p. 11.

¹⁴⁴ On the use of soap in textile manufacture, see Misson, *Mémoires . . . par . . . un voyageur en Angleterre*, 1698, p. 383.

¹⁴⁵ Walter Harris, *Remarks on the Affairs and Trade of England and Ireland*, 1691, p. 56.

¹⁴⁶ H. M. C., *Report on the MSS. of the Earl of Mar and Kellie*, pp. 70–4, has a "table of Scottish produce exported yearly", as submitted to James I in 1614. The total value of all articles exported is given as £736,986 Scots (£1 sterling equals roughly £12 Scots). "Wairris and commodities that the land yieldis" account for £375,085, "Commodaties that the sea randeris yeirlie", £153,354, "Forrane wairris re-exported", £39,047. "Commodaties that ar maid and wrocht in the countries quhairby the peopill ar sett to labour" amount to £169,097, but only £50,000 to £60,000 worth of these commodities (notably salt and gloves) were exported as finished goods.

wrote a certain English visitor, Sir Anthony Welldon, who is said to have suffered banishment from Court for his blasphemous reflections on the King's native land.¹⁴⁷ And although England, closer to the Continent, stood a step higher in the industrial scale, it would probably have seemed at the beginning of the sixteenth century as primitive, judged by the sophisticated standards of a trader from Florence or Antwerp, as Scotland a century later seemed to Welldon. By 1700, however, England and, to a less degree, Scotland had taken rank with the leading countries of the world, both in the quantity and the quality of their manufactured goods, and this development is reflected in the writings of contemporary English authors who touch on economic affairs.

What has this early growth of British manufactures to do with coal? The answer is that without coal it could never have taken place. Without coal an expansion would have begun, but it could hardly have continued. Already by the end of Elizabeth's reign the development of industry had begun to make great inroads upon the supply of timber, and it is evident that what was causing a critical shortage was the increase of industrial enterprise.

¹⁴⁷ *Ibid.*, *Report on the MSS. of Lord Middleton*, pp. 184-5.

The Substitution of Coal for Wood

THE expansion of industry, and particularly the expansion of the woollen industry, diminished the space available for planting new trees. Ever since the time of Thomas More, who was among the first to comment on the increase in sheep farming, much attention had been paid to the conversion of arable fields to pasture, especially in the sixteenth century. But, if the wool growers encroached upon the corn fields, they also encroached upon the woodlands. They did so not only directly, but also indirectly, since, for acres of arable turned to grass, acres of waste including some woodland were turned to arable.¹ Notwithstanding persistent complaints of the decay of husbandry, it seems likely that not less land was devoted to arable farming in 1650 than in 1500; for the native population still depended, except in time of famine, on English-grown grain, and, although the spread of more efficient methods of fertilization had no doubt increased the yield per acre, there was now a considerably larger population to feed.² It may be suggested, therefore, that, at least until 1700, it was less the supply of grain than the supply of timber which suffered through the extension of enclosure.

In all counties near the sea, writes an anonymous authority towards the end of Elizabeth's reign, "most of the woods are consumed, and the ground converted to corn and pasture".³ When Owen examined old Pembrokeshire records in 1603, he discovered that what then were great corn fields, once had been forests.⁴ Landowners thought it far more profitable, after their trees had been cut down, to cultivate the ground or set sheep to graze upon it, than to plant new trees, which took years to mature. All through the seventeenth century they continued to allow old woodlands to be turned into corn fields or pastures, in spite of the lamentations of Evelyn and others who deplored the decline of forestry, and did so with the full approval of the school of economic thinkers represented by John Houghton, who saw in wood planting a positive waste, and who advocated the destruction of all trees and shrubberies within twelve miles of the sea or of navigable rivers, in order that the land might be converted to other uses.⁵ Sheep raising, as has often been shown, provided lords of manors with one powerful motive for enclosing land, and

¹ E. F. Gay, "Inclosures in England in the Sixteenth Century", in *Quart. Journ. of Econ.*, vol. xvii (1903), p. 589.

² Possibly the complaints of the decay of husbandry were due rather to the increase in the number of persons who had to have bread than to any falling off in the supply of grain.

³ H.M.C., *Report on the MSS. of the Marquis of Salisbury*, vol. xiv, pp. 330-1.

⁴ *Description of Pembrokeshire*, p. 86.

⁵ Evelyn, *Sylva, or a discourse of Forest Trees, and the propagation of Timber*, 1664, Houghton, *Husbandry and Trade*, vol. i, pp. 99 sqq., and vol. iv, pp. 258 sqq., 399-400.

these enclosures were the more serious for the peasant, because they cut him off from supplies of wood and turf, which in former times he had been permitted by custom freely to take from the commons to repair his house and make his fire.⁶ Thus enclosures often precipitated a timber crisis in country districts.

If the growth of the woollen industry in particular discouraged the planting of trees, the demands of industry in general quickly drained the existing forests of most of their timber. For in that age wood was the raw material of all industry to an extent which it is difficult for us now to conceive. Charcoal had to be mixed with saltpetre in preparing gunpowder. From the bark of trees workmen extracted a sap, then indispensable in making pitch and tar, with which to caulk the hulls of ships, and from wood ashes came potash, an essential constituent for the production of soap, glass, and saltpetre. The principal drain caused by the expansion of industry arose, of course, not from such relatively unimportant uses of wood as these, but from the demands for it as a building material and as a fuel.

Ours has been often called an age of coal and iron, and it is perhaps no less appropriate to call the sixteenth and seventeenth centuries an age of timber.⁷ Metal still entered only to a small extent into the construction of containers of any kind, of looms or spinning wheels, of carts or coaches, of ships or small river craft. All tools were of wood, except the actual cutting edge or striking face. Muskets had wooden shafts and ramrods, cannons wooden carriages. Although housebuilders worked with brick, stone, and lead more than in the past, they continued to use much timber,⁸ and the Great Fire is an unhappy testimonial of the continued predominance of wooden construction. The expansion of every industry meant an increased demand for timber, first in buildings, then in tools and machines, finally in containers and conveyances to carry away the product. Sometimes this demand took the form of a deep bite into the native stock of trees, such as was required to build a long bridge, or a large sea-going vessel like a man-of-war, whose hull, decks, and sides might be fashioned out of four thousand great oaks;⁹ sometimes it took the form of a mere nibble, as in making a beer barrel or a farmer's scythe. Enough nibbles, however, could make a bite, as is shown by an Act of Parliament passed in 1593, which required all exporters of beer either to return the original barrels, or to bring back from abroad an equivalent quantity of clap-board fit to make casks.¹⁰

Even more disastrous to forest conservation than the demand for build-

⁶ See, e.g., H. Stocks, *Records of the Borough of Leicester, 1603-60*, pp. 240-1.

⁷ Cf. W. Sombart, *Der Moderne Kapitalismus*, 1916, vol. ii, pp. 1138-40; Stow's *Annals*, ed. E. Howe, 1631, p. 1024.

⁸ Even in building churches and cathedrals (*Cal. of Letters and Papers of Henry VIII*, vol. xiv, pt. 11, p. 109; W. Cunningham, *Growth of Industry and Commerce, Modern Times*, 1921 ed., pt. 1, p. 523, note; Owen, *op. cit.*, p. 76).

⁹ Sombart, *op. cit.*, vol. i, p. 768.

¹⁰ 35 Eliz., cap. 11.

ing timber in industry, was the demand for charcoal and wood to burn Few, if any, manufactured goods can be produced without fuel, generally it is an important element in the cost of production; sometimes it is the chief element. Shipbuilding in the Elizabethan age—to take one example—required heat, not only to smelt, forge, and shape all metal work, but to dry planks and bend them into proper shapes to fit the curving hulls and sides.

The production of woollen cloth, which to the layman might appear to require next to no fuel, involved the consumption of timber on a considerable scale. On the one hand, there were a number of articles, essential to the trade, which could be made only with the aid of fire: such as shears for clipping the fleece from the sheep's back, alum for fixing the dyes and rendering them more luminous, soap for scouring and scrubbing the wool, wire cards and combs for carding and combing it. On the other hand, clothiers themselves required fuel to carry out several necessary steps in clothmaking; the copper cauldron in which they cleaned the wool after sorting, the leaden vat in which they dyed it, and, finally, the stove in which, while combing, they had constantly to warm and re-warm the teeth of their combs, all had to be heated.¹¹ The manufacture of these cauldrons and vats also involved a large consumption of fuel. Again, when it came to working cloth into wearing apparel, fuel had to be provided for steaming felt hats, making buttons, and many other purposes. It is not surprising to find that at Wollaton in Nottinghamshire, in 1589, the woods had been sensibly diminished by use in "molting", clothing, dyeing, and "jarnsey" [jersey].¹² Some decades later, inhabitants of the little town of Cranbrook in Kent complained to the Privy Council of a crisis in their trade of cloth-making, brought on by the high price asked of the dyers for firewood to burn beneath their vats.¹³ In short, cheap fuel supplies were of considerable importance to the textile manufacturers

It is unnecessary to dwell at length on the many thousand uses for firewood in early industry¹⁴ It is sufficient to point out that no change could be wrought in ore or metal without the aid of fuel; that substantial quantities of wood and charcoal were being consumed in making starch, refining sugar, baking bread, firing pottery, tiles, bricks, and tobacco pipes, drying malt and hops, and boiling soap. Attention has been called to the persistent complaints of the exhaustion of timber supplies. It is evident that the process must have been greatly accelerated by the extension of fuel-consuming industries.

There are cases in which we can follow in some detail the drain on the timber supply caused by the expanding manufactures. In the late sixteenth and early seventeenth centuries ovens, furnaces, and boilers appear to have been (as for some time after they continued to be) amaz-

¹¹ Heaton, *Yorkshire Woollen and Worsted Industries*, pp. 333-5.

¹² H.M.C., *Report on the MSS. of Lord Middleton*, p. 499

¹³ S.P.D., *Charles I*, vol. ccclxii, nos. 55, 56.

¹⁴ For further information on the point see below, pp. 328 sqq.

ingly spendthrift, owing partly, no doubt, to a lack of experience in methods of economizing fuel.¹⁵ Three London brewers are said to have consumed 2,000 wagon loads of firewood in the year 1578, and, if the other brewers used as much, the annual consumption of wood for brewing in the city must have approached 20,000 wagon loads.¹⁶ More than one load was required to boil down two hundredweight of saltpetre, or to bake 2,000 bricks.¹⁷ On an average about four loads were used at Droitwich in the 'seventies to reduce brine water to a ton of salt,¹⁸ and at least as much had to be provided to burn the limestone to make a ton of lime. Since two wagon loads probably cleared away the trunk, if not the branches, of a fair-sized tree, it is evident that every increase in the quantity of bricks or saltpetre, lime or salt manufactured with wood fuel involved serious new encroachments upon native timber resources.

But the chief wastage was caused by glass makers and smelters. Glass making required just the sort of timber that best served the shipbuilders. According to Sir Robert Mansell "no wood [was] fit to make glasse, under twenty years groath"¹⁹ One glazier, Giacomo Verzelini, a fugitive Venetian, is reported to have used 400,000 billets of wood, amounting perhaps to 2,000 wagon loads, per annum²⁰ That is a greater quantity than most iron works consumed, but iron works were, of course, far more numerous than glass works. One of them in Glamorgan burned, in making charcoal, at least 3,000 cords of wood annually.²¹ To convert ore into a ton of bar iron, in Sussex, Shropshire, Nottinghamshire, Staffordshire, Monmouthshire, or the Forest of Dean, apparently required about 12 loads of charcoal, made from 41 cords (5,125 cubic feet) of wood, the equivalent of eight young beech trees, one foot square "at the stubbe".²² A ton of

¹⁵ Cf. below, pp. 342-4.

¹⁶ S.P.D., *Elxz*, vol. cxxvii, no. 68. Seven years later the brewers in the "Cittie, Subbarbs, and Westminster" are said to have numbered twenty-six (*Lansdowne MSS.*, 71, no. 28).

¹⁷ It was estimated in 1589 that the wood consumed in preparing 5,000 cwt of saltpetre amounted to 3,000 wagon loads (*Lansdowne MSS.*, 56, no. 63). On bricks see Sir Balthazar Gerbier, *Counsel and Advice to all Builders*, 1663, pp. 52-3.

¹⁸ 6,000 wagon loads of wood were spent in making 1,600 wagon loads of salt (Harrison, *Description of Britain*, 1577, bk. iii, chap. xvii.) The boiling down of seawater required even more fuel than the boiling down of brine (see below, p. 333).

¹⁹ S.P.D., *James I*, vol. clxii, no. 63, printed Hartshorne, *Old English Glasses*, pp. 426-31.

²⁰ *Ibid.*, pp. 174-5

²¹ H.M.C., *Report on the MSS. of Lord de L'Isle and Dudley*, p. 29.

²² This included the expense of wood both at furnace and forge. See "The Charge of the makinge of a tonne of Iron in Canke Wood" (i.e. Cannock Chase), November 25th, 1588 (*Lansdowne MSS.*, 56, no. 36).

"[At the Furnes] —

Wood for 7 lode of Coles for blowinge one tonne and a half sowes at 3½ Cordes to everie lode of Coles 24½ Cordes at 12d. <i>ls</i> corde	24/6
For cutting 24½ cordes: at 5d. <i>ls</i> Corde	10/2½
For Colinge those 5 lodes at 2/- <i>ls</i> lode	10/-
For Carringe of the said 5 lodes at 2/- <i>ls</i> lode	10/-
For Carringe the Cordes into the pitt at 3½d. <i>ls</i> corde.	8d. [<i>sic</i>]
Colliers wages at 100/- per annum	1/-
Founders wages at 10/- <i>ls</i> foundrey	2/6
The Fyllers wages for the lyke tyme	2/6
Repairinge the furnes bellowe lethers and such like	2/6
Clarkes wages at £10 per annum	2/-
Myne readie laid at the pitt 5 lode at 9/- the lode	45/-

wrought lead, tin, or copper represented a loss in wood nearly as large. And, as the annual output of metal of all kinds may have exceeded 35,000 tons early in the seventeenth century,²³ it is safe to assume that smelters then felled at least 200,000 stout trees a year. One anonymous writer in 1611 estimated the annual cost of firewood consumed in iron works alone at £800,000.²⁴ "Nature", wrote Evelyn, "has thought fit to produce this wasting ore more plentifully in woodlands than any other ground, and to enrich our forests to their own destruction"²⁵

"There is one man", wrote an inhabitant of Weardale in 1629, "whose dwellinge place is within twenty miles of the cittye of Durhame, which hath brought to the grounde . . . above 30,000 oakes in his life tyme; and (if hee live longe) it is to be doubted that hee will not leave us so much tymber or other woode in this whole county as will repaire one of our churches, if it should fall, his iron and lead works do so fast consume the same".²⁶ Such a spoil of timber, whether pursued by smelters or by glaziers, could end only in the complete exhaustion of local forests, unless, as in Warwickshire, the commons, incensed over the rising price of wood, "rose in tumults and expelled the glass makers by force".²⁷

[At the] Fordge —

Wood for 5 lode of Coles for hammeringe one tonne at 3½ Cordes to everie lode of Coles 17½ Cordes at 12d le Corde	17/6
Cuttinge of 17½ Cordes	7/3
For Colinge 5 lodes 2/-	10/-
Carrienge of everie lode of Coles from the pitt to the hammer 2/-	10/-
Hamermans wages	16/8
Carrienge to the heape at ½ le lode	2½d
Labourers and extraordinary charges	2/6
Repairinge etc	1/-
Keep of the Iron at 100/- per annum	1/-
Carrienge one tonne and a half sowes from the Fordge to the Fornes at 2] -le tonne	3/-
Total	£9

The estimate of the number of beech trees used in making twelve loads of charcoal is based on *Exch Dep by Com*, 22 Eliz, Trinity 4 (as cited Salzman, *English Industries of the Middle Ages*, p. 40).

The assumption that the wood required for smelting a ton in Staffordshire was about the average amount generally required at this time is based on evidence concerning the consumption of wood at furnaces and forges in Sussex (as given in *V.C.H. Sussex*, vol. ii, p. 247), Wyre forest, Shropshire (*V.C.H. Shropshire*, p. 460), Nottinghamshire (*H.M.C., Report on the MSS of Lord Middleton*, pp. 494-5), Monmouthshire (*Exch Spec Com*, no. 1518), and the Forest of Dean (*Harleian MSS*, 7009, no. 16). To make a ton of ordnance is said to have required ten cords of wood less than to make a ton of bar iron.

²³ In 1636 the annual output of English lead is said to have reached 12,000 tons (see above, p. 293). The output of iron in 1611 was probably even greater (see above, pp. 294, 295). Less than 500 tons of smelted tin were then produced, according to the Stannary records (Lewis, *The Stannaries*, Appendix J). I have found no estimate of copper production.

²⁴ *Harleian MSS*, 7009, no. 5. He estimated the number of mills at 800, and said that "falling, billeting, and coaling and carriage" cost each mill £1,000 per annum. His figures are no doubt highly exaggerated.

²⁵ Evelyn, *Sylva*, quoted John Holland, *The History and Description of Fossil Fuel*, 1835, p. 323.

²⁶ A. L., *A Relation of some Abuses which are committed against the Commonwealth*, 1629, p. 9 (printed in *Camden Miscellany*, vol. iii, 1855).

²⁷ *V.C.H. Warwickshire*, vol. ii, p. 244.

"As the woods about [here] decay", relates a native of Worcestershire in the nineties of the sixteenth century, "so the glasshouses remove and follow the woods with small charge".²⁸ That was the common practice throughout England and Scotland. Norden in 1607 observes that, during the past thirty years, such havoc has been wrought by iron and glass makers in the famous Wealds of Sussex, Surrey, and Kent, "the grand nursery of . . Oak and Beech", that he fears "lest fewe yeeres more, as pestilent as the former, will leave fewe good trees standing in those Welds".²⁹ In Sutherland and Ross-shire, George Hay, one of the most active promoters of early Scottish industry, is said to have "kept a colony and manufactory of Englishmen making iron and casting great guns, until the wood of it was spent".³⁰ One reason for the decline of copper smelting at Keswick towards the end of Elizabeth's reign was the exhaustion of the woods fit for charcoal.³¹

Obviously the country could not go on indefinitely exhausting a commodity then ranked among the chief national assets. "It hath bene. . esteemed as a principall Patrimonie of this our Realme", begins a royal proclamation of 1615, "that it hath yeelded goodly quantitie . of Wood and Timber . . , the timber is not only great and large in height and bulk, but hath also that toughness and heart, as it is not subject to rive or cleave, and thereby of excellent use for shipping, as if God Almighty, which had ordained this Nation to be mighty by Sea and navigation, had in his providence indued the same with the principall materiall conduced thereunto".³² Some decades earlier, spoil made by iron works and glass furnaces had begun to alarm Elizabethan statesmen, for every year enough trees were destroyed by smelting to rebuild the entire royal navy.³³ The consumption of wood in glass manufacture, the proclamation of 1615 proceeds, "does so import the state of this Our Kingdome as it were the lesse evil to reduce the times unto the ancient manner of drinking in Stone, and of Latice-windowes, then to suffer the losse of such a treasure".³⁴ And, indeed, had there been no other way of meeting the problem of deforestation, the burst of industrial enterprise which accompanied the later years of Elizabeth's reign, must have died in its infancy.

To substitute other material for timber in building or carpentry work was to leave the problem unsolved, so long as it required more wood to forge the iron spokes of a wheel than to make them with timber, and more wood to bake the materials needed to erect a house in brick, than to build it of timber throughout. Only by using a substitute for wood

²⁸ *Ibid*, vol ii, pp 248-9

²⁹ *The Surveyor's Dialogue*, p. 214.

³⁰ D. W. Kemp, *Notes on Early Iron Smelting in Sutherland*, 1887, p 5, W I. MacAdam, "Notes on the Ancient Iron Industry of Scotland", in *Proc. Soc. of Antiq. of Scot.*, vol. xxi, 1887, p. 89

³¹ W. G. Collingwood, *Elizabethan Keswick*, 1912, pp 13-14, 93

³² Royal Proclamation of May 23rd, 1615, printed Hartshorne, *Old English Glasses*, pp 413-14.

³³ *Ibid*, pp 157-9. ³⁴ *Ibid*, p 413

fuel could the country hope to maintain and expand its manufactures. "Of colemines", observed Harrison in 1577, "we have such plentie in the north and westerne parts of our Island as may suffice for all the realme . . . ; and so must they doo hereafter in deed, if wood be not better cherished than it is at this present".³⁵ The want of timber, as an anonymous writer maintained a few decades later, "is and can only be supplied by our use and preservation of our Cole Mines".³⁶ Thus it was that the replacement of wood by coal became a principal aim of state policy and inventive effort.

It was undoubtedly the rapid spread of the use of coal in warming rooms, in cooking food, and in "all other common services requisite in house-keeping,"³⁷ that occasioned the chief demand for it, and that relieved in greatest measure the drain on the timber supplies of Britain during the seventeenth century. The relative cost of coal as compared with other fuels determined the extent to which it replaced them in the domestic hearth and the kitchen oven. As substitutes for coal were generally dearest where population was most dense, more coal was probably burned per head in London than in Cambridge, when its price was the same in both places. Again, the use of coal spread more slowly among the rich than among the poor, who could less afford to pay the extra price required to obtain wood, and who had to content themselves with a less pleasant fuel.

In London, where population tended more and more to concentrate, wood remained almost the only fuel burned, even by the poorest housekeepers, until the general rise in timber prices after 1540, notwithstanding that the Company of Fishmongers had agreed in 1446 to distribute every year to the needy 30 or 40 tons of coal at less than cost price.³⁸ During a serious fuel crisis in the winter of 1542-3 the Lord Mayor wrote: "I am daily at every wharf where wood lyeth and distribute to the poor at a reasonable price as much as will go around, to the great loss of the owners [of wood] as they affirm".³⁹ He said nothing about coal.⁴⁰ Not until 1554 did the Common Council vote a fifteenth, to be levied on all citizens, "towards provision of sea coles from time to time to be provided and brought to this city to be kept in a stock for ever as well for the succor of the poor when need shall require as for all other inhabitants".⁴¹ Only when Harrison wrote, in 1577, could it be said that the "greatest

³⁵ *Description of Britam*, 1577, bk. iii, chap. xvi.

³⁶ S.P.D., *James I*, vol. clxxx, no. 77.

³⁷ *Lansdowne MSS.*, 59, no. 71

³⁸ 132 "quarters" (H. Humpherus, *History of the Company of Watermen and Lightermen*, 1887, vol. i, p. 49).

³⁹ To the Privy Council (*MS. Journals of the Common Council of the City of London*, vol. xv, f. 6).

⁴⁰ But at about this time the supplies of mineral fuel provided for the poorer citizens must have been increased. Sir John Allen, a lord mayor, who died in 1544, "gave 500 markes to bee a stocke for sea coale" (Stow, *Survey of London*, ed. C. L. Kingsford, 1908, vol. i, p. 112).

⁴¹ *MS. Journals of the Common Council of the City of London*, vol. xvi, f. 279b. This action of the city government may have been brought about by the Privy Council, which had ordered in 1551 a survey of all the London wharves, for the purpose of estimating the total stock of "sea coal" then in the City (*Acts of the Privy Council*, N.S., vol. iii, pp. 313-14).

trade" in coal had begun "to grow from the forge into the kitchen and hall".⁴² In 1595 a complaint against the rising price of coal was made on behalf "of the poor who do use the same for their chiefest fuel", and a few years later Attorney-General Hobart said that without coal the "poore laboringe persons and ordinarie handy crafts men are not hable to maynetayne theire houses and famylies".⁴³ Henceforth, the citizens of the capital adopted the new fuel with a rapidity of which the statistics of London imports, as given in an earlier chapter, are sufficient evidence.⁴⁴ Coal is described at the time of the Civil War as a commodity "absolutely necessary to the maintenance and support of life", and by 1676, according to Petty, it was generally burned in chambers in London.⁴⁵

It would be a mistake to think that its use for domestic fuel was confined to the large towns. The growing market⁴⁶ for Welsh coal towards the end of the seventeenth century throughout the south-western counties of England, where it was used "as well for burning of lime as alsoe for fireinge",⁴⁷ indicates that country householders, even at a considerable distance from the pits, had begun to turn to coal. Along the east coast of Ireland from Carrickfergus to Youghal coal is said to have been by 1636 "almost the only material used for firing".⁴⁸ It had become indispensable in a small port like Aldeburgh by the middle of the seventeenth century, for during the Civil War, when the supply of Newcastle coal was shut off, the inhabitants, being unable to get enough timber for their fires, were driven to burn flag and heath.⁴⁹ Christopher Merret, the surveyor of the port of Boston, has left an account, written in the last decade of the seventeenth century, telling how the poor people of Lincolnshire, unable to buy fuel, wander along the seashore, in cold weather, and "sweep together a black small substance—I suppose 'tis Coales broken—wherewith they make Fires, by leaving open a Hole in their Chimneies for the Air to blow it".⁵⁰

Its use, at first confined to the poorer households, spread gradually among the rich. Throughout the seventeenth century, the King and some old-fashioned aristocrats clung to wood for heating their halls and private

⁴² *Description of Brittain*, 1577, chap. xvi. Coal was not yet very extensively burned in London, however, as Harrison himself implies in another passage.

⁴³ *Acts of the Privy Council*, N S, vol. xxv, pp. 31-2, *Star Chamb Proc*, James I, 13/2.

⁴⁴ Not all coal imported was consumed within the city, nor was all coal consumed within the city burned in domestic fires (see below, pp. 325 sqq.).

⁴⁵ Firth and Rait, *Acts of the Interregnum*, vol. 1, p. 171, Sir Wm Petty, *Economic Writings*, ed C H Hull, 1899, vol. 1, p. 304.

⁴⁶ R G Gough, *Anecdotes of British Topography*, 1768, p. 296, note 6, Elizabeth Godfrey, *Home Life under the Stuarts*, 1603-49, 1903, p. 237. There remained, of course, inland districts remote from the pits, like the Scottish Highlands, rural Hertfordshire, or Oxfordshire, where wood and peat remained almost the universal fuels. See J P Bunting, *Sylva Subterranea*, 1693, chap. xiii; P Kalm, *Account of his Visit to England in 1748*, trans. by J Lucas, 1892, p. 355, Adam Smith, *Wealth of Nations*, 1920 ed., p. 167.

⁴⁷ *Exch. Depo by Com.*, 24 Charles II, East 24, and see above, p. 312-13.

⁴⁸ *Cal S P. Irish*, 1633-47, p. 130.

⁴⁹ H M C, *Rep. on MSS. in Various Collections*, vol. iv, p. 286.

⁵⁰ Royal Society, *Philosophical Transactions*, vol. xix, 1695-7, pp. 357-62.

chambers,⁵¹ though not their kitchen ovens, in spite of the praises which certain English writers began to bestow upon what had once been thought the meanest of all fuels. When, in 1623, a ship was stocked for the Prince of Wales, charcoal was the only combustible provided,⁵² although Martin Frobisher had supplied himself with 14 tons of coal for his voyage in 1577, and although coal had become the fuel ordinarily used by seamen.⁵³ For a time rich Londoners were able to supply the needs of their entire establishments by buying wood, charcoal, and Scotch "pitcoal", but occasional payments for north of England "seacoal" creep into Lionel Cranfield's kitchen ledger in 1621.⁵⁴ By 1637 "seacoal" had become a much more important item, at least in the fuel expenses for the Earl of Rutland's town mansion. His steward's "usual provision" for one year included 30 tons of "seacoal", 6 tons of Scotch coal, 26 loads of Kentish faggots and 12,000 "billes".⁵⁵ Between the accession of James I and the Civil War the prejudice against common Newcastle coal was largely overcome. In 1644 men recalled a time when "some fine Nosed City Dames used to tell their husbands: OHusband! We shall never bee well, we nor our Children, whilst wee live in the smell of this Cities Seacole smoke, Pray, a Countrey house for our health, that we may get out of this stinking Seacole smell". But, the blockade of Newcastle having deprived them of the fuel they had hitherto despised, "how many of these fine Nosed Dames now cry, Would to God we had Seacoale, O the want of Fire undoes us! O the sweet Seacoale fire we used to have, how we want them now, no fire to your Seacoale!"⁵⁶

For cooking, north of England coal came to be considered, after the Restoration, "far beyond Wood, as yielding not only a more even, but more piercing Heat".⁵⁷ It is "by far to be prefer'd before either Wood or Turf", we learn from another Englishman interested in the culinary art, "as it affords a more even Heat than the former, and more intense than either".⁵⁸ Later, when coal from the St. Etienne district (a grade resembling that of Newcastle) was substituted for wood in the kitchen fires of the famous Lyons epicures, many decided that coal "makes meat more succu-

⁵¹ Misson, *Mémoires par un voyageur en Angleterre*, 1698, pp. 33-4, 52. According to Latimer, wood or charcoal was commonly burned in the Council House at Bristol throughout the seventeenth century, although the townsmen generally had adopted the coal fire (*Annals of Bristol in the Seventeenth Century*, 1900, p. 29).

⁵² Sackville MSS. (Account of money spent for a voyage by the Prince of Wales, 1623).

⁵³ Exch. K.R. Misc. Bks., Series 1, vol. xxxv, for which reference I am indebted to Dr Conyers Read. See also *Acts of the Parliaments of Scotland*, vol. ii, p. 543, P.C.R., vol. xxxvi, f. 185, and vol. liv, f. 167, *Cal. S.P.D.*, 1658-9, p. 210, *Cal. of Treas. Bks.*, vol. vi, p. 259.

⁵⁴ Sackville MSS. ("Earl of Middlesex Kitchen Ledger")

⁵⁵ H.M.C., *Rep. on the MSS. of the Duke of Rutland*, vol. 1, pp. 499-500. For his castle at Belvoir the Duke's "yearly provision of Fuel" in 1612 had been 20 wagon loads of charcoal and 200 wagon loads of "Pitt Coles" (*ibid.*, vol. iv, pp. 480 sqq.). If the "pit coal" for Belvoir Castle came from Nottinghamshire, it was probably a grade resembling Scotch coal, and therefore pleasanter to burn than seacoal (cf. below, p. 344).

⁵⁶ *Artificiaall Fire, or Coals for Rich and Poore*, 1644

⁵⁷ Gluyll M[eig]el, *The New State of England*, 1691, vol. ii, pp. 32-4

⁵⁸ *The New Present State of England*, 1727 (?), vol. ii, p. 29

lent by rendering the juices thicker".⁵⁹ In a well-to-do London household, like that of the Pepys, coal had become by 1660 the common fuel for all purposes, though charcoal was burned, as a luxury, in the dining room and the bedroom, when it could be obtained.⁶⁰

It was enough to astonish the foreigner at the end of the seventeenth century that coal should be burned at all in private houses, either for heating or cooking. Except in the Belgian provinces, there were no large towns on the Continent where the inhabitants made coal fires. Even though coal had some market among manufacturers in many districts, the prejudice against its use within the household was destined to persist for decades in most European cities.⁶¹

With so smoky a fuel, the English had to abandon their crude early habit of building the family fire in the centre of the room and allowing the fumes to circle about before they escaped through an opening in the roof. Probably the introduction of coal led to the increased building of chimneys, which so impressed Harrison when he wrote in 1577.⁶² In 1618 a petition was presented to the Lord Mayor and Aldermen on behalf of 200 city chimney sweeps,⁶³ so that in London chimneys must have been by this time almost universal. Henceforth even poor country houses were seldom built without them, as the sponsors of the unpopular hearth tax knew full well. Instead of constructing open fireplaces with chimneys, the English might have adopted the stove, which had already come into general use in the German and Scandinavian countries, and which Montaigne found so agreeable on his visit to Switzerland. By means of the stoves one could maintain a comfortable, even temperature throughout the room and avoid any fumes.⁶⁴ But the English opposed the stove on the same ground that they oppose the modern central-heating plant: "it gives a chilling impression to go into the sharp air after being so warm in stove rooms".⁶⁵ From a Frenchman's description of the manner in which the English made their coal fires at the end of the seventeenth century,

⁵⁹ Aléon Dulac, *Observations sur le charbon minéral*, 1786. "Le cuisinier, quoique françois," wrote in 1738 a French authority on the use of coal in England (*Archives Nationales*, O1293), "de mon avis le préfère pour le rost [rôti] et pour faire quantité de ragout, au charbon de bois".

⁶⁰ *Diary*, ed. H B Wheatley, 1893, vol. i, p. 32, vol. iii, pp. 13, 342-3, 345.

⁶¹ The first serious attempt to introduce coal as a household fuel in Paris is said to have occurred in 1714 (Savary, *Dictionnaire du commerce*, art. "charbon", see also H.M.C., *Rep. on the Stuart Papers*, vol. 11, p. 271). In 1770 Jars spoke of the use of coal for domestic purposes at Lyons, St Etienne, and St. Chamond as a recent development (*Sur le charbon*, f. 4). In 1755 coal was never burned for cooking in Westphalia, and only in the *Amtern* of Bochum and Hattingen for heating houses. As late as 1762 in Brunswick, mineral fuel apparently never served for domestic purposes, although it had long been used by limeburners and other artisans. The prejudice against its use for house fuel persisted as late as 1796 in Munich, and in Bavaria generally (Hue, *Die Bergarbeiter*, vol. i, pp. 345, 351).

⁶² See above, p. 322-3. For the early history of the chimney see J. Beckmann, *History of Inventions*, vol. 1, pp. 295-314.

⁶³ *Analytical Index to Remembrancia MSS.*, 1878, p. 67.

⁶⁴ There was, however, according to Montaigne, "une certene odeur d'air qui vous frappe en entrant", and this odour the English found unpleasant. *Journal de voyage, 1580-1*, 1909 ed., pp. 92-3.

⁶⁵ G[uy] M[eige], *The New State of England*, p. 32.

it is evident that their system of heating houses has been hardly modified in two and a half centuries.

"They put into the Chimney certain Iron Stoves about half a foot high, with a plate of Iron behind and beneath; before and on each side are Bars placed, and fastened like the Wiers of a Cage, all of Iron. This they fill with Coal, small or great, as they run, and in the middle they put an handful of Small-Coal, which they set Fire to with a bit of linnen or paper. As soon as this Small-Coal begins to burn, they make Use of the Bellows, and in less than two Minutes the other Coal takes Fire. You must blow a little longer after this, 'till the Fire is a little spread round about, and then you hang up the Bellows. In proportion as the Coal grows hotter it dissolves, becomes glutinous, and sticks together. To keep it up and revive it, you now and then give it a Stir with a long Piece of Iron made on purpose. As it burns out you must throw on more Coals, and thus with a little Pains you have a Fire all day long".⁶⁶

Macaulay expressed a common opinion of his day when he wrote that, before the eighteenth century, coal "was very little used in any species of manufacture",⁶⁷ and the truth of that opinion has been pretty generally accepted by subsequent writers. Yet the statement of Macaulay would not have been accepted by most of the contemporaries of Milton or even of Shakespeare, and one is left, after a study of industry in the seventeenth century, with the impression that, as a generalization, it is hardly defensible. "Yt is generally knowne", argued Robert Bewick, one of the leading Newcastle colliery owners, in a case brought against him in 1619 for the corrupt mingling of an inferior grade with the best coals, "that Seacole is useful to be spent in other places [than halls and kitchens] and for . . . other purposes".⁶⁸ "Within our Realme of England", runs a proclamation drafted in 1590, "the use of coales is of late yeares greatlie augmented, not onlye for fuell, but also to serve divers tradesmen and Artificers"⁶⁹

Who then were these tradesmen and what were their trades? One may conveniently consider them under three separate headings: (i) trades in which coal had been burned before the sixteenth century; (ii) trades in which the substitution of coal for wood involved no serious technical problem, and (iii) trades in which this substitution did present such a problem Data concerning the quantities burned in the various trades are unfortunately meagre. The statistical conclusions which have been reached concerning the consumption of coal in industry are, consequently, only hypothetical.

⁶⁶ H. M. de V., *Mémoires . . . par un voyageur en Angleterre*, 1698, pp. 50–1. The version is that given in J. Ozell's translation, *M. Mirson's Memoirs and Observations in his Travels over England*, 1719, pp. 37–8.

⁶⁷ *History of England*, Philadelphia, 1879, vol. i, p. 247.

⁶⁸ *Star Chamb Proc.*, James I, 56/10.

⁶⁹ *Lansdowne MSS.*, 65, no. 9.

(i) *Trades in which coal had been burned before the sixteenth century*

It has been shown that during the Middle Ages there were only two artisans who made any considerable use of coal—the limeburner and the smith. To most readers these are little more than names. As indicated earlier, the term smith was applied in medieval times to persons performing almost every kind of work in metal⁷⁰ For our present purpose, the expression “smiths’ work” is used to cover all work done in iron, lead, silver, gold, copper, tin, or zinc, after the raw ore had been converted into metal.

If there is any aspect of the medieval coal industry that compels the special attention of the historian, it is surely its relation to smiths’ work, and more particularly to the making of “weapons of war”. In Scotland, most of the records of coal purchases in medieval accounts of the Crown are connected with the manufacture of arms and marine equipment from iron, or with the melting down of lead into bullets and shot.⁷¹ In London the Clerk of the Works in the Tower was perhaps the chief early trader in coal, and his stock may well have been kept for purposes of defence. Coal is associated with the medieval armament industries at Essen and St. Etienne.⁷² At Liége the fabrication of arms preceded the manufacture of gunpowder in the fourteenth century,⁷³ and a nineteenth-century scholar has stressed the fact that in the Belgian provinces the primitive armament industry left its traces in just those spots where the medieval miners dug coal.⁷⁴

However much one may wish to stress this relation between coal and the medieval manufacture of weapons of war, one is bound to remember that in the Middle Ages the armament industry itself was of small importance in comparison with its importance during the sixteenth and seventeenth centuries,⁷⁵ when for the first time gunpowder came to be extensively used. We have referred to the development of new and quasi-new processes in the British metal trades, and have given reasons for thinking that the production not only of arms but of all kinds of small metal goods,

⁷⁰ Cf. above, p. 295.

⁷¹ *Exchequer Rolls of Scotland, passim; Accounts of the Lord High Treasurer, passim*. For a description of the manner of making shot in England at the end of the seventeenth century see Houghton, *Husbandry and Trade*, vol. II, pp. 204–6. As late as 1653 iron shot was apparently still made with the aid of a charcoal fire (see below, p. 329, no. 85).

⁷² Hue, *Die Bergarbeiter*, vol. I, p. 347, L. J. Gras, *Essai sur l’histoire de la quincaillerie et petite métallurgie à Saint-Etienne*, 1904, pp. 2–4.

⁷³ F. Henuaux, *Fabrique d’armes de Liége*, 1858. Gunpowder was known, however, in the thirteenth century (cf. Beckmann, *History of Inventions*, vol. II, pp. 487 sqq.).

⁷⁴ Decamps, *Mémoire historique sur l’industrie houillière de Mons*, pp. 18–19. According to Henuaux the armament workers at Liége were organized in a gild before the miners. One would think that, if the armament industry settled at Liége because of the supplies of mineral fuel, the coal miners would have been organized before the armament workers.

⁷⁵ This was as true of the Liége armament industry as of the English (Pirenne, *Histoire de Belgique*, vol. III, p. 249).

increased greatly between the accession of Elizabeth and the Revolution of 1688.⁷⁶

Harrison's remark, that the "greatest trade" in coal began "to grow from the forge into the kitchen and the hall",⁷⁷ must not be taken to mean that coal left the forge. On the contrary, its use in working up metals into finished goods increased more than in proportion to the increased output of such goods. With the extraordinary rise in timber prices, a steadily diminishing number of smiths could afford to produce their wares, as once they had done, exclusively with charcoal and wood fuel. They found mineral fuel so much more economical to burn,⁷⁸ that along the northern coast of France, as early as 1552, according to an English merchant, Thomas Barnabe, smiths who import coal from the north of England, "can lyve no more without [it] than the fysh without water —they can nother make steele worke, nor metall worke, nor wyer worke, nor goldsmythe worke, nor gunnes, nor no manner of thinge that passeth the fier".⁷⁹ While Barnabe, in his desire to call attention to the export of English coal, may have stolen something of a march on the facts, his description, had it been made a century later, would not have been an exaggeration. Under Louis XIV the forges on both sides of the frontier between France and Savoy came temporarily to a standstill, because the Savoyards, who had coal but no iron, refused to bring coal across the border, and the French, who had iron but no coal, retaliated by preventing the export of iron.⁸⁰ Upon the threat of a Dutch war in 1671, Colbert told the *intendant* at Rochefort to obtain a two years' supply of coal for the marine arsenals there and at Brest, since, once war commenced, it might be impossible to get through from England the commodities essential for their maintenance.⁸¹

Before this time a great number of English metal workers had become equally dependent on mineral fuel. In 1546 a Master of the Ordnance was requested to provide ammunition for a convoy for "vessels laden with coals for the pieces beyond seas".⁸² A supply of "seacoal" was thought necessary for the coppersmiths at Keswick early in Elizabeth's reign, even though the supply had to be carried so far overland as to cost

⁷⁶ See above, pp. 295–8.

⁷⁷ See above, pp. 322–3.

⁷⁸ Francis Bacon, *Sylva Sylvarum*, 10th ed., 1676, p. 164.

⁷⁹ Tawney and Power, *Tudor Economic Documents*, 1924, vol. ii, pp. 99–100.

⁸⁰ Boislisle, *Correspondance des Contrôleurs Généraux*, vol. iii, no. 1818 (Letter of M. d'Angerville, *intendant* in Dauphiné). A similar situation arose on the two sides of the boundary between the Spanish Netherlands and the province of Hainaut, which was temporarily French in 1710, a war being waged between the masters of forges in Hainaut, who had coal but no iron, and those of the Spanish Netherlands, who had iron but no coal (*ibid.*, vol. iii, no. 797). Where coal was only to be had at a prohibitive price, the masters of forges continued to burn wood, or at least mixed only small quantities of coal with their wood (*ibid.*, vol. ii, no. 355, Letter of M. Foucault, *intendant* at Caen).

⁸¹ P. Clément, *Lettres, instructions et mémoires de Colbert*, vol. iii, pp. 380–1. An inventory taken in 1677 of the French naval arsenals (*ibid.*, vol. iii, pt. ii, p. 696) shows that all had on hand stocks of coal; Rochefort had 14 tons, Brest, 110 tons, Havre, 1½ tons, Dunkirk, 25 tons, Toulon, 700 tons.

⁸² *Cal. of Letters and Papers of Henry VIII*, vol. xxi, pt. ii, no. 387.

twelve times the pithead price.⁸³ At Wigan in 1602 coal was a "fyering . . . without which . . . divers artyficers and other tradesmen cannot use their trades and occupations"; and, as we know from another source, many of these artificers and tradesmen were metal workers.⁸⁴ During the second Dutch War, in 1665, the Master of the King's Ordnance in London reports "that for want of Coales the Forges Employed . . . with Gunsmiths and others have been enforced to cease from working for some dayes",⁸⁵ and John Timbrell, who is "employed in makeing Anchors and other Ironworks, for the use of his Majesties Navy, att Portsmouth", petitions the Crown because he "wants Coales . . . for . . . carryeing on . . . the . . . workes".⁸⁶

In certain districts the smiths had abandoned charcoal fires altogether, for many of their operations. Yarranton, writing in 1677, denied that the forges in Staffordshire, Worcestershire, Shropshire, Warwickshire, and Derbyshire prejudiced the timber supplies, because the iron workers—so he said—burned only coal.⁸⁷ Apparently this was true also in the neighbourhood of Sheffield, for Mr. Lloyd, in his interesting book on the cutlery trades, tells us that, although most of the forests there had been cut down during the sixteenth and seventeenth centuries, "the activity of the iron industry was undiminished".⁸⁸

By means of various technical improvements, which we discuss in the next chapter, it became possible in the seventeenth century to use coal in several metallurgical processes, which had hitherto depended exclusively upon charcoal, because contact with the fumes of seacoal damaged the product. Even in producing the finer type of finished metal work, coal, which had been considered in medieval times altogether too crude a fuel, began to replace wood. From a petition addressed to the Crown in 1610 by Sir William Slingsby of Yorkshire, himself a colliery owner in Northumberland, we learn that iron wire was already drawn in a "Pit Coale" fire.⁸⁹ Slingsby proposed among other things to substitute mineral for wood fuel in drawing copper and "latten" wire and in all

⁸³ W G Collingwood, *Elizabethan Keswick*, pp. 31, 168 sqq.; H M C, *Rep on the MSS of the Marquis of Salisbury*, vol. x, p. 217. "Sea Coles" were also purchased for the copper works near Swansea in 1586 (C B Wilkins, *A History of the South Wales Coal Trade*, 1888, p. 18).

⁸⁴ *Duchy of Lancs. Pleadings*, 195/S/10, D Sinclair, *History of Wigan*, 1882, vol. 1, p. 89.

⁸⁵ *P C R*, vol. lviii, p. 124. It is certain that charcoal was not meant, for the Privy Council instructed the Lord Mayor to provide 150 chaldrons. Charcoal was not sold by the chaldron. The London gunmakers had experienced similar difficulties during the coal shortage of 1643 (*History of the Town of Newcastle* (Anon.), 1801, p. 460). While coal seems to have been by the middle of the seventeenth century indispensable for forging the metal parts of guns, it was not always burned in the process of making shot out of iron. For that purpose the metallurgical workers near Gloucester still employed charcoal as late as 1653 (*Cal. S.P.D.*, 1653-4, p. 142), although they perhaps mixed some mineral coal with it.

⁸⁶ *P C R*, vol. lviii, p. 116. The reference is certainly to mineral coal (see preceding footnote). See also *Cal. S.P. Colonial*, 1661-8, p. 427.

⁸⁷ Yarranton, *England's Improvement by Sea and Land*, 1677, pp. 58-60, 147-9.

⁸⁸ G. I. H. Lloyd, *The Cutlery Trades*, 1913, p. 69. At the beginning of the eighteenth century there were 18 collieries in the neighbourhood (*ibid.*, p. 75).

⁸⁹ *Harleian MSS.*, 7009, no. 4.

"battery work".⁹⁰ Under the Commonwealth, coal, as well as wood, was supplied to the mint for making gold and silver coin.⁹¹

The total annual consumption of mineral fuel in Great Britain towards the end of the seventeenth century in all kinds of metal work is a matter for speculation. To-day in Paris, a small smithy, worked by the owner and one or two assistants, burns about twelve tons of coal a year. In the district north and west of Birmingham during the reign of Charles II, one could count by the thousand⁹² forges which were not very different, perhaps, from those in modern Paris, and, as these Staffordshire forges are said to have burned no other fuel than coal, one may assume that tens of thousands of tons were there consumed each year.⁹³ Around Sheffield metal workers were almost as numerous. Forges in small or large numbers were to be found, also, in nearly every town and village through the Midlands and along the coasts. In making a list of London artisans who are prejudiced by taxes on coal, an anonymous writer in the last decade of the seventeenth century puts first the smiths, a "numerous, laborious, and ingenious" people, who "use great store of seacoal".⁹⁴ When we consider that the amount of metal wrought into finished products in England and Wales probably approached 60,000 or 70,000 tons,⁹⁵ and that there was also some metallurgical manufacture in Scotland, it seems hardly possible that by this time less than 200,000 tons of coal were consumed annually by all the metal workers in Great Britain. The actual consumption may have been a good deal larger than this.

An estimate of the quantity burned in lime making in Great Britain is even more difficult to make, for the industry was scattered throughout the country, rather than concentrated in special districts.⁹⁶ Although Sir Balthazar Gerbier wrote in 1663 that wood was a more desirable fuel

⁹⁰ A term which may be taken to apply to hammered brass and copper vessels generally.

⁹¹ *Cal. S.P.D.*, 1651, pp. 234, 488, *Exch. K.R. Accounts, Supplementary*, 620/62 ("Edward Lole his bill for sea Coles and Billets delivered into his Matyes Mynt", 1640). As early as 1623, seacoal had been mixed with charcoal and wood in making "Angell Gold, Crowne Gold, and silver moneys" (*Sackville MSS.* Accounts of the making of these moneys, July, 1623-July, 1624). The "Coles" referred to in an "estimate of the charges of refining the base money received into the Mint", 1560-1 (*Lansdowne MSS.*, 4, no. 58), are probably charcoals.

⁹² According to Dud Dudley there were "twenty thousand Smiths or Naylor at the least" (*Metallum Marris*, 1665, p. 53). That is no doubt an exaggeration, but the shops of these workers were certainly very numerous (see above, p. 297).

⁹³ According to Jorden (*Discourse of Natural Barbers*, 1631, p. 23), the smiths were accustomed to throw water upon their fires of mineral coal, the water making the coal cake and bake together, whereas otherwise the blast of the forge might blow it away. Water also made the fires last longer.

⁹⁴ *Reasons for the taking off the Tax of Five Shillings per Chaldron on Coals*.

⁹⁵ Mr. Ashton is inclined to estimate the iron production early in the eighteenth century at rather more than 25,000 tons—25,000 tons of pig, and a small amount of bar iron which did not pass through the blast furnace at all (*Ashton, Iron and Steel in the Industrial Revolution*, pp. 235-6). In addition, from 14,000 to 22,000 tons of bar iron was imported in favourable years for trade (see above, p. 295 n.). It is probable that at least as much lead was being produced at the end of the seventeenth century as in the thirties when the output was estimated at about 12,000 tons. The native production of copper must have been considerable, and it was supplemented by substantial imports. The output of tin was nearly 1,500 tons at the end of the seventeenth century (Lewis, *Stannaries*, p. 256).

⁹⁶ Cf. above, pp. 312-13.

than coal for the lime makers, because it enabled greater quantities of lime to be burned at one time, we know that lime burners had made use of coal for centuries, and, before the end of the seventeenth century, it had become almost the universal fuel for the innumerable limekilns which served the husbandman in the country and the builder in the towns.⁹⁷ Want of "see coles" is said to have caused a decay in the husbandry of Cambridgeshire as early as the reign of Henry VIII.⁹⁸ In addition, towns like Newcastle and London had kilns producing considerable quantities of lime for sale in the neighbourhood, and even for export abroad.⁹⁹ At Gravesend, near the mouth of the Thames, Sir William Brereton described in 1634 a kiln in which "the fire extinguisheth not from one end of the year to the other".¹⁰⁰ As early as 1640, a shortage of coal engendered a serious crisis in the building trades of the capital. Various owners of limekilns, having been refused supplies by the coal merchants, petitioned the Privy Council that they were "bound by covenant to serve . . . with lime . . . all the Bricklayers and others . . . who are now building for persons of quality; which they cannot performe unlesse they may have coale to keepe in their fyers, soe that of necessity the said Buildings must suffer".¹⁰¹ The lime market increased rapidly with the increase in brick and stone construction work, and with the improvement in the methods of husbandry. Since something like half a ton of coal was probably required to make a chaldron of lime to serve as mortar or fertilizer,¹⁰² the quantity burned annually in the lime industry at the end of the seventeenth century must have amounted to tens of thousands of tons.

(ii) *Trades in which the substitution of coal for wood involved no serious technical problem*

In certain parts of Great Britain a little coal undoubtedly had been burned in salt making before the sixteenth century. Seacoal, picked up on the shores of Yorkshire, is said to have served the medieval salters along the coast,¹⁰³ and, since small quantities of salt were made by the evaporation of sea water close to the early coal workings in Northumberland, Fife, and the Lothians, it is tempting to assume a connection be-

⁹⁷ Gerbier, *Counsel and Advise to all Builders*, 1663, pp. 56-7.

⁹⁸ *Star Chamb. Proc.*, *Henry VIII*, vol. v, f. 21.

⁹⁹ *MS. Journal of the Common Council of Newcastle*, 1650-8, ff. 469, 484, *Lansdowne MSS.*, 79, no. 90.

¹⁰⁰ Brereton, "Travels in Holland, etc.", in *Publications of Chetham Soc.*, vol. i, 1844, pp. 1-2.

¹⁰¹ *P.C.R.*, vol. lxi, p. 730.

¹⁰² The chief expenses in lime making were the cost of kiln and utensils, coal, and limestone. For the quantity of lime required in building see below, pp. 342-3. For information concerning the coal consumed in lime burning in connection with castle building in Scotland, see *Works Accounts* (General Register House, Edinburgh), vols. vi, xi, xii. For information concerning the coal used for making lime in connection with fortress building on the French coast, see Clement, *Lettres instructions et mémories de Colbert*, vol. v, pp. 198-9; Boislisle, *Correspondance des Contrôleurs-Généraux*, vol. i, nos. 372, 1890.

¹⁰³ *V.C.H. Yorkshire*, vol. ii, p. 387.

tween the two industries in those counties. Yet in the Firth of Forth district, if not in the north of England, salt making almost certainly preceded the digging of coal.¹⁰⁴ If the makers were in no hurry for their product, sea water gathered in troughs on the coast could be reduced to salt by the mere heat of the sun,¹⁰⁵ though this must have been a tedious process, especially in the north where the sun so seldom shines uninterrupted for many hours, and it was certainly abandoned at all the important works in England long before the salters in southern France gave it up. We cannot be sure that, even where coal could be had cheaply, the first artificial fuel adopted in Great Britain was not wood.¹⁰⁶ Not until the sixteenth century do we get abundant references to the use of mineral fuel for heating the pans in which the sea water, or the brine from natural springs, was boiled down to salt. In Germany, where, during the seventeenth century, this manufacture probably provided the largest single market for coal, it was shipped down the river Saale, as early as 1517, to heat the pans at Wettin near Halle.¹⁰⁷ Before the end of the sixteenth century the owners of a salt plant at Soden, just east of Frankfurt-on-Main, purchased supplies of coal, which were said to have been brought by river transport down the Meuse and up the Rhine, all the way from Liége.¹⁰⁸ Another plant at Allendorf on the Weser depended for fuel upon lignite dug in the Harz mountains.¹⁰⁹

Coal served the salt makers in Scotland and at the mouth of the Wear and the Tyne, at least from the beginning of the sixteenth century.¹¹⁰ By 1605 the annual consumption of "pan coal" (as it had come to be called by the English) in the "works" within the counties of Durham and Northumberland had reached about 50,000 tons.¹¹¹ A pan full of salt water

¹⁰⁴ There were salt works in Scotland in the reign of King David, 1124-53 (R. N. Boyd, *Coal Pits and Pitmen*, 1892, p. 18). The Domesday Book mentions salt pans along the coasts of Kent, Surrey, and Sussex (Galloway, *Annals of Coal Mining*, pp. 11, 63-4). It is well known that salt was a very important commodity in ancient civilizations.

¹⁰⁵ Cf. Agricola, *De Re Metallica*, ed. Hoover, pp. 547 sqq.

¹⁰⁶ "Panwood" was a common term for the mineral coal burned at the Scottish salt works in the seventeenth century (*Accounts of the Torry Coal and Salt Works* (General Register House, Edinburgh), 1679, MSS. of the Duke of Hamilton, Charters, no. 154, ii (1644)). It is possible to argue that the word "panwood" itself indicates that at an early period in Scotland wood, rather than coal, was burned to heat the pans. If "panwood" originally applied to mineral fuel, it is the only instance I know of in which the word wood was used to mean coal.

¹⁰⁷ O. Hue, *Die Bergarbeiter*, vol. 1, p. 349. The salt manufacture at Halle took on a great importance during the seventeenth century, when the majority of shares in the enterprise were owned by the King of Prussia.

¹⁰⁸ *Ibid.*, p. 351. Later lignite from pits near Soden was substituted.

¹⁰⁹ L. Beck, *Geschichte des Eisens*, vol. ii, pp. 102-3; K.T. von Inama-Sternegg, *Deutsche Wirtschaftsgeschichte*, 1909, vol. iii, pt. ii, p. 115.

¹¹⁰ *Acts of the Parliaments of Scotland*, vol. iii, p. 93*b*; Galloway, *op. cit.*, pp. 64-5; *A History of Northumberland*, vol. ix, pp. 223-4. Salt making with mineral fuel is said to have been uncommon in the Tyne area before the sixteenth century (E. Hughes, "The English Monopoly of Salt in the years 1563-71", in *Eng. Hist. Rev.*, vol. xl, 1925, pp. 334-50).

¹¹¹ Brand, *History of Newcastle*, vol. ii, p. 22 (taken from a manuscript in the Duke of Northumberland's collection). According to the writer of this document there were within the two counties 153 pans, each of which consumed 16 tens (160 Newcastle chaldrons, or nearly 350 tons) per annum. The term "pancoal" came into general usage in the Tyne district only at the beginning of the seventeenth century (*Exch. Spec. Com.*, no. 5037).

had to be boiled dry eight successive times before the salt was ready for sale; to accomplish this the fire had to be kept burning at white heat three days and a half.¹¹² About six tons of coal were consumed in making a single ton of salt.¹¹³ Water from the brine springs was far more saliferous than sea water, so that at inland works fewer boilings, and a much smaller quantity of coal, served to produce a ton of salt. At the Cheshire "wiches" less than one ton sufficed,¹¹⁴ at Droitwich, in Worcestershire, where the brine was weaker, at least two tons must have been required, for there the pans were boiled four or five times.¹¹⁵

At the works in Worcestershire and Cheshire, however, wood was burned exclusively for more than a century after coal had become the common fuel for salt making in Scotland and the north of England, because all the brine springs were situated more than twelve miles overland from the nearest colliery. In spite of the long haul, pit coal largely replaced wood at the springs in Cheshire shortly before 1669,¹¹⁶ and at the springs in Worcestershire between 1665 and 1678.¹¹⁷ Before 1700 coal had become almost the only fuel used, not only in the manufacture of salt from sea water and from brine, but also in the manufacture of rock salt, the rock being carried to the coal pits, where it was dissolved in water and then evaporated like brine.¹¹⁸

Sir Lionel Maddison (whose informing letter on the mining industry of the north of England we have had occasion already to cite) estimated the annual consumption of coal in the salt works of Shields and Sunderland just before the Civil War at about 90,000 tons: 80,000 tons in the works at Shields, 10,000 tons in the works at Sunderland¹¹⁹ At the end of the seventeenth century the salt industry of the Tyne and Wear was at least as important as before the Civil War, and, in addition, a considerable manufacture had been established at Blyth, Cullercoates, and Seaton

¹¹² Lord Harley, "Journeys in England", in *H M C, Rep. on MSS. of the Duke of Portland*, vol. vi, p. 105.

¹¹³ I have arrived at this figure by comparing the output of salt and the consumption of coal as given in Brand, *op. cit.* vol. ii, p. 22, and in *Cal. S P D*, 1644-5, pp. 98-9. Lord Harley believed that the quantity of coal required was even larger (*loc. cit.*), but he was probably misinformed.

¹¹⁴ John Collins, *Salt and Fishery*, p. 5. At Northwich 1,488 horseloads of coal were required to produce 12,214 bushels of salt, i.e. (allowing 40 bushels to one weigh of salt, 8 loads to one ton of coal) about 12 cwt. to produce 1 weigh. At Middlewich 632 loads of coal were required to produce 4,300 bushels of salt, i.e. slightly more than 15 cwt. to produce 1 weigh. At Nantwich 1,216 loads of coal were required to produce 4,200 bushels of salt, i.e. nearly 1½ tons of coal to produce 1 weigh. Taking the three wiches together 3,336 loads of coal were required to produce 20,714 bushels of salt, i.e. slightly more than 16 cwt. to 1 weigh.

¹¹⁵ *Ibid.*, p. 3. See also Plot, *Natural History of Staffordshire*, p. 128. We know that at Droitwich, before the substitution of coal for wood-fuel, 4 wagon loads of wood were required to make a ton of salt (See above, p. 319.) One ton of coal usually replaced about 2 loads of wood in industrial processes (See below, p. 343.)

¹¹⁶ Royal Soc., *Philosophical Transactions*, vol. iv, 1669, pp. 1061-7 (Dr. Wm Jackson, *Salt-making at Nantwich*).

¹¹⁷ Between the publication of Dud Dudley's *Metallum Martis*, and the article on the salt works at Droitwich by Dr. Thomas Rastell (*Phil. Trans.*, vol. xii, 1678, pp. 1059-64).

¹¹⁸ *The Case of the Refiners of Rock Salt in Lancashire, Cheshire and Flintshire*, 1698 (?) *The Case of the Brine Pits truly stated*, 1698 (?)

¹¹⁹ 3,900 "tens" (*Cal. S P D*, 1644-5, pp. 98-9)

Delaval. Consequently the annual consumption of coal in salt making within the counties of Durham and Northumberland could hardly have been less than 125,000 tons between 1680 and 1690. Round the Firth of Forth pans were even more numerous and at least as spendthrift of fuel. In 1679 one colliery at Tulliallan produced 15,000 tons for the salters.¹²⁰ By that time (if one may venture to estimate it) the annual consumption in all the salt works of the Forth may have reached 150,000 tons. John Collins tells us in 1682 that the brine springs of Northwich, Middlewich, and Nantwich in Cheshire used 417 tons a week,¹²¹ so that the consumption there perhaps approached 20,000 tons a year. It seems highly probable that, at the end of the seventeenth century, more than 300,000 tons were burned every year by the salt manufacturers of England and Scotland combined.¹²²

Unless the new taxes on coal used by them were withdrawn, protested "divers makers of alum and copperas" in 1655, the industry would be ruined.¹²³ Sir Paul Pindar, a farmer of the Crown alum works near the Yorkshire coast, made representations to the county justices in 1637 to the effect that his business had been brought to a standstill, since they had forbidden shipmasters to unload coal at Whitby because of the plague at Sunderland.¹²⁴ When these Yorkshire works were started during James I's reign, wood had already grown so dear that the alum manufacturers had been obliged to depend upon supplies of coal.¹²⁵ For "calcining", or heating, the alum stone (in much the same manner that iron or copper ore were "calcined" prior to the first smelting), "wood and furzes", as well as the cinders of coal, were used as late as 1678, but in the subsequent boilings a raw coal fire sufficed. Calcined alum stone, dissolved in pits of water, and mixed with kelp and urine, had to be twice boiled down (like the brine for making salt) in great metal pans, nine feet long by five broad and two and a half deep, before the alum was ready for sale.¹²⁶ So slow was the process that eight pans were required to make alum at

¹²⁰ *Register, Edinburgh, Kincardine and Tulliallan Coal and Salt Works, Accounts, 1679-80.* Professor Jevons estimates the annual consumption of coal in salt making at Culross in 1630 at 45,000 tons (H. S. Jevons, *The British Coal Trade*, 1920, p. 152).

¹²¹ See above, p. 333, n. 114 (the figures are for one week's manufacture).

¹²² From 100,000 to 150,000 tons per annum in Durham and Northumberland, an equally large quantity on the Firth of Forth, about 40,000 tons at the brine pits, and perhaps 30,000 tons at the sea-salt pans of the north-west coast (Cumberland and Ayrshire), and in the new manufacture of rock salt. In reaching the figure for the brine pits, I have assumed that the annual consumption of coal at the Cheshire wishes was nearly 20,000 tons. At Droitwich, where the output of salt was perhaps as large as at Northwich (see above, p. 333) and where at least two tons of coal were probably required to produce a ton of salt (see above, p. 301), the consumption of coal may have exceeded 20,000 tons.

¹²³ *S.P.D. Interregnum*, vol. xciv, no. 106. The same complaint had been made by a farmer of the alum works (Sir John Gibson) in 1637 (*Cal. S.P.D.*, 1637, p. 210).

¹²⁴ *S.P.D.*, Charles I, vol. ccclvii, no. 85. Actually most of the coal was unloaded not at Whitby but on the south bank of the river Tees.

¹²⁵ *Lansdowne MSS.*, 152, no. 6, f. 57.

¹²⁶ For a full description of the process of alum manufacture see *Royal Soc., Philosophical Transactions*, vol. xii, 1678, pp. 1052-6 (*An Account of the English Alum Works*, by Daniel Colwall, Esq.). See also *Lansdowne MSS.*, 152, no. 6, f. 63.

the rate of five tons a week.¹²⁷ At least three tons of coal, and probably more, were consumed in producing one ton of alum.¹²⁸ According to Maddison, various works along the coasts of Durham and Yorkshire consumed upwards of 7,000 tons of Sunderland coal a year during the decade preceding the Civil War.¹²⁹ It is not possible to estimate the quantity shipped from Sunderland after the Restoration.¹³⁰ There was probably a considerable development of the manufacture at Hartlepool, and an expansion of the Scottish industry, which had been started somewhat later than the English. Ten thousand tons would seem to be a conservative estimate of the annual consumption of coal in British alum manufacture at the end of the seventeenth century.

Copperas stones, placed in water, had to ripen for five or six years in long wooden reservoirs, before the solution was drained into a great boiler (made to contain 12 tons of the liquid) and heated, together with a certain amount of iron dust, over a coal fire, sometimes for twenty days. Fresh liquid was pumped in as the solution came to a boil, and more iron dust added from time to time. When Sir William Brereton sailed along the south-east coast in 1634, he described a copperas works at Queenborough which consumed about 300 tons of coal a year.¹³¹ After the Restoration the most important copperas works was at Deptford, and there greater quantities of coal must have been burned than at Queen-

¹²⁷ *Harleian MSS*, 7009, f. 9; *Exch Spec Com*, no. 5789 (see testimony of witnesses). The Commissioners found that, in the alum works at Guisborough, Skelton, and Loftus, 64 pans would be needed to produce the projected output of 1,800 tons per annum. The pans were apparently placed side by side under cover in what was called an alum house.

¹²⁸ *S.P.D.*, *James I*, vol. lxxiv, no. 19. Two thousand Newcastle chaldrons (about 4,500 tons) were to be supplied to make 1,500 tons of alum. Though it was hoped to produce 1,800 tons of alum per annum at the Yorkshire works, the ordinary output did not exceed 1,000 tons between 1609 and 1618 (*Lansdowne MSS.*, 152, no. 6, f. 57). In one year (1613-14), however, 2,422 Newcastle chaldrons (more than 5,000 tons) of coal were imported at Whitby and Coatham (*V.C.H. Yorkshire*, vol. II, p. 384). One suspects, therefore, that the provision of 2,000 chaldrons may have proved an insufficient quantity of fuel to produce 1,500 tons of alum.

¹²⁹ *Cal S.P.D.*, 1644-5, pp. 98-9. For confirmation of Maddison's estimate see *Exch Dps by Com*, 9 Charles I, Mich. 11 (testimony of Sir John Hedworth). The alum works at Hartlepool, as well as those in Yorkshire, got coal from Sunderland, and the 3,000 chaldrons may have included supplies for both.

¹³⁰ *Exch K.R. Port Bks*, bd1 198. About 500 Newcastle chaldrons of coal for "Mr Conyers alum works" at Whitby were imported in the year 1677-8 and again in the year 1678-9. Apparently the manufacture at Mulgrave, near Whitby, was seriously handicapped during the Interregnum. An agent for the alum works there, Thomas Shipton, who testified before Exchequer commissioners in 1662 (*Exch Spec Com*, no. 6548), gave the following statistics for the output at Mulgrave —

	Tons.]
1652-5 . .	400 to 500
1656-8 . .	700
1659 . .	900
1660 . .	1,000
1661 . .	1,100

A stock of 900 chaldrons of coal was on hand at the works in 1662

¹³¹ See above, p. 311.

borough.¹³² Both the copperas and the alum manufacturers used the inferior grade known in the Newcastle district as "pancoal".¹³³

Saltpetre, as it came from the incrustations of old buildings, was allowed to dissolve, like alum and copperas, in water, and was prepared in tubs for boiling in copper kettles, set in a furnace of brickwork. "To save charges in fewel", wrote John Houghton in his weekly bulletin, the solution from an extra tub is made to "dribble at a tap below as fast into the copper as the force of the fire doth waste your liquor".¹³⁴ Great quantities of fuel must have been consumed, for the first boiling sometimes lasted sixty hours, and it was followed by two subsequent boilings, after the hot liquid had been passed through wood ashes.¹³⁵ The substitution of coal for wood had been contemplated in 1589, and in 1596 upwards of 40 tons of coal from Wollaton colliery was delivered to John Foxe of Nottingham, "saltpeterman".¹³⁶ In 1627 Mr Evelyn (probably the father of the diarist) protested to the House of Lords Committee for Defence of the Kingdom, that he "can get no seacoals, and cannot therefore proceed with the making of gunpowder".¹³⁷ Henceforth coal was the principal fuel used in the manufacture, which was carried on in many counties, although as late as 1663 the saltpetre itself was burned prior to the boilings (a process corresponding to the "calcining" of alum stone) over a wood fire.¹³⁸ Gunpowder, as it came from the mill (where it had been compounded out of saltpetre, brimstone, and charcoal), was laid on "drying sieves", and placed in a small room, about 20 feet square, called the "stove". By the middle of the seventeenth century, if not earlier, the practice was to heat this room by a coal fire, for when war with the Dutch broke out in 1665, the "powder makers" of London were reported to "stand in great need of Sea Cole for carrying on of that Worke", and, notwithstanding the shortage of domestic fuel felt by the citizens, the Lord Mayor was asked to supply them at once with 240 tons.¹³⁹ Though it probably required nearly five tons of coal to produce a

¹³² Royal Soc., *Phil. Trans.*, vol. xii, pp. 1056-9 (*An Account of the way of making English Green Copperas*, by Daniel Colwall, Esq.).

¹³³ S P D., *Intervrum*, vol. xciv, no. 106.

¹³⁴ Houghton, *Husbandry and Trade*, vol. ii, p. 115.

¹³⁵ Ibid., pp. 115-19. Common salt was a by-product of the first boiling, and was used for salting beef, bacon, tongues, etc.

¹³⁶ H.M.C., *Report on the MSS of Lord Middleton*, pp. 163-4.

¹³⁷ *Lords' Journals*, vol. iii, p. 547. In 1628 coal was brought from pits at Westerleigh in Kingswood Chase to Tetbury for the manufacture of saltpetre (S P D., *Charles I*, vol. cxxi, no. 10). See also the demand made in 1640, by one Sikes, deputy for making saltpetre in the counties of Essex, Suffolk, and Norfolk, for a supply of coal which dealers in Maldon had refused to sell him, and without which he could not proceed with the saltpetre manufacture (P C R., vol. liii, pp. 27-8, *Cal. S P D.*, 1640-1, p. 79).

¹³⁸ Birch, *History of the Royal Society*, vol. i, pp. 281-2.

¹³⁹ P C R., vol. lviii, p. 105. In 1638 the gunpowder makers at Henley, Windsor, and other towns along the Thames refer to their need for coal, a need which arises only once in every six or seven years "which is when the workes are in those parts" (S P D., *Charles I*, vol. ccxciiii, no. 13).

ton of saltpetre suitable for preparing gunpowder,¹⁴⁰ the total amount of coal thus consumed was unimportant when compared with the consumption in salt making, for the manufacture of saltpetre and gunpowder, like the manufacture of alum and copperas, remained a small industry. An output of only 300 tons of saltpetre per annum was contemplated in 1589,¹⁴¹ when commissioners for this manufacture were first furnished with a royal warrant, and there is evidence that by 1636 the output was little more than had been contemplated in 1589.¹⁴²

Undoubtedly the amount of coal burned in the manufactures of alum, copperas, saltpetre, and gunpowder combined was only a fraction of the amount burned in boiling soap, refining sugar, making starch and candles, and preparing preserved foods. Sugar, soap, starch, and candles (the universal means of lighting both private and public halls in London and mines in the provinces¹⁴³) had come before 1700 to be commodities in general demand throughout the British Isles, among the poor as well as the rich.¹⁴⁴ Alum and copperas, on the other hand, found their principal market among the dyers, while saltpetre and gunpowder were required almost solely for armed defence, which did not yet constitute the crushing burden upon the national exchequer that it does to-day. The value of the soap consumed in London during one year in the latter part of the seventeenth century was estimated at £121,875.¹⁴⁵ It is doubtful whether the value of all the alum, copperas, and gunpowder produced in Great Britain was very much greater. Larger quantities of fuel were probably consumed in soap-boiling, therefore, than in making alum, even if it required more fuel to produce a ton of alum than to produce a ton of soap.

We lack information concerning the quantity of coal burned in any one of this financially more important group of trades. Two patentees obtained a licence in 1615 to make oil and pith out of vines, and soap with a "seacoal" fire.¹⁴⁶ Soon after, the soap-boilers were numbered among

¹⁴⁰ One load of wood was required to produce 2 cwt. of saltpetre before the substitution of coal for wood. A ton of coal generally took the place of two or more loads of wood in processes of this sort (See below, p. 343.)

¹⁴¹ *Lansdowne MSS.*, 58, no. 63, wherein the probable consumption of wood is estimated at 3,000 wagon loads. Assuming that one load was spent in producing 2 cwt. of saltpetre, we have a projected output of 300 tons of saltpetre.

¹⁴² *S.P.D.*, *Charles I*, vol. ccxli, no. 68. In 1636 the weekly output was apportioned between the "saltpetremen" in the various counties as follows: Gloucs., Worcs., Hereford, Wilts., Dorset, Somerset, each 7 cwt., Salop, Devon, Cornwall, and six Welsh counties, each 9 cwt., Ches., Lancs., Cumb., Westmor., Flint, and North Wales, each 2 cwt., Yorks., Northumb., Bishopric of Durham, Town of Newcastle, Town of Hull, each 3 cwt. In addition some saltpetre may have been manufactured in London.

¹⁴³ Houghton, *op. cit.*, vol. 1, pp. 343-4.

¹⁴⁴ The place occupied by sugar refining in the national economy is rather more uncertain than that of the other industries mentioned. In spite of the efforts of the Crown to prevent it, some refined sugar was imported, and a considerable part of the supply brought from the West Indies was re-exported raw (F. W. Pitman, *The Development of the British West Indies, 1700-1763*, 1917, p. 340, see above, p. 312 n.). Nevertheless, there were well over a hundred refineries in Great Britain by the middle of the eighteenth century, when a depression in the manufacture is said to have affected about 1,800 persons (Pitman, *op. cit.*, p. 340). It may be doubted whether as large a number of workmen were employed in making alum and copperas combined.

¹⁴⁵ Houghton, *op. cit.*, vol. i, pp. 349-50.

¹⁴⁶ *Cal. S.P.D.*, 1611-18, p. 291.

the chief "spenders" of the new fuel.¹⁴⁷ Good soap was made usually from olive oil and tallow, "boiled for many hours together," and then mixed with potash, "first slack'd with lime".¹⁴⁸ It is uncertain when coal was first used in the British sugar industry, but there can be little doubt that such use was general before 1650, for, during the second half of the seventeenth century, sugar refiners were among the chief French consumers of coal, which they imported in large measure from England and Scotland.¹⁴⁹ As for the chandlers, they needed fuel to heat their tallow, and one may assume that they used coal, for they are to be counted among the most conspicuous London retailers of that commodity shortly after the Civil War. Coal had become essential to those in charge of supplying the navy with food and drink. In preparation for the Dutch War of 1665-7, Denis Gawden, "surveyor of the King's marine victuals", arranged "to bring seacoal to the several victualling ports for his Majesty's service", and hired a vessel to carry 80 chaldrons, or more than 100 tons, to London for "boylng pickle".¹⁵⁰ At about the same time, two "brewers for the King's Navy" received 110 chaldrons from the Lord Mayor out of the stock which he held for the relief of the poor.¹⁵¹

Dyers and brewers are invariably mentioned during the sixteenth and seventeenth centuries in any list of the great consumers of coal in London.¹⁵² Both tradesmen must have made some use of it at the beginning of the fourteenth century, for they were cited along with the limeburners in the proclamation of 1307, forbidding all but smiths to burn this black mineral in the capital.¹⁵³ It would be a mistake, no doubt, to suggest that either the dyers or the brewers felt themselves bound to keep to the letter of the proclamation. But they were hindered in burning coal by another prejudice, which did not touch the limeburners, and which proved perhaps a stronger deterrent than any law. It arose from the prevailing opinion that the smell and the dirt of a seacoal fire would be transmitted to the taste of ale and to the texture of cloth. This prejudice (like the prejudice that mineral fuel, if used in cooking, would contaminate food) probably prevented any wholesale adoption of coal in dyeing and brewing.

¹⁴⁷ Rymer, *Foedera*, vol. xix, f. 561.

¹⁴⁸ Houghton, *op cit*, vol. i, p. 349

¹⁴⁹ Boislisle, *Correspondance des Contrôleurs Généraux*, vol. ii, no. 355, note, and appx p. 498
Coal would hardly have been imported from Britain for sugar refining in France had it not been burned by the British sugar refiners. A new method of sugar refining was explained to the English Privy Council in 1615 (*Acts of the Privy Council*, 1615-16, p. 284), and this may have involved the substitution of coal for wood. For a description of sugar refining in England see Houghton, *op cit*, vol. ii, pp. 314-20

¹⁵⁰ *PCR*, vol. lviii, p. 127

¹⁵¹ *Ibid*, vol. lviii, pp. 115, 116, 124

¹⁵² See for instance S.P.D., *Charles II*, vol. cxix, no. 24, *PCR*, vol. lviii, p. 124, Rymer, *Foedera*, vol. xix, f. 561, *The Present State of the Coal Trade*, 1703, Tim Nourse, *Campania Felix*, 1700 Evelyn (*In Fumifugium*, 1661, pt. i, p. 15) enumerates as the chief consumers of coal in London. "Brewers, Diers, Lime-burners, Salt and Sope-boilers . . ."

¹⁵³ A. Anderson, *Origin of Commerce*, 1801, vol. 1, p. 148.

in England before Elizabethan times,¹⁵⁴ though in Flanders the progressive textile manufacturers had already discovered the advantages of the new fuel. These advantages were perceived by an English trader, William Cholmeley, as early as 1553. "I saye", he wrote, "that we have plentye of sea cole in many partes of this realme, so that we may in most partis ... have them to serve our turne in dyeing as well as the Flemmingis have, and as good cheape, for they burne and occupye none other fuell then coles that are dygged out of the grounde, like as our smythes doe Our dyeing therefore should not be wastful to our wodis, but rather a preserveyng, by staying the Newcastell colys at home, for then shoulde oure dyars, that do nowe wast much wode in dyeing disceytful coloures, burne no wode at all, and yet shoulde they dye as true and perfect coloures, and to them more benefytt".¹⁵⁵

Whatever effective restraints on the use of coal in dyeing may have existed before the reign of Elizabeth evidently disappeared with the rise in timber prices, for in 1578 the London Company of Brewers sent a petition to Walsingham, pointing out that its members, together with "diars, hat-makers" and others (not specifically named), "have long sithens altered there furnasses and fierie places and turned the same to the use and burninge of Sea Coale".¹⁵⁶

In the textile industry the new fuel was used principally for heating the dyers' vats, the cauldrons in which clothiers scoured their wool, cotton, linen, or silk, and the kilns in which they dried flax or yarn, or steamed hats Clothmakers of the town of Cranbrook, in the heart of Kent, complained to the Privy Council in 1637 against John Brown, Crown Commissioner for making brass or iron ordnance and shot, on the ground that he had raised the prices they paid for their wood, by burning large quantities in his furnaces Brown insisted, in his defence, that while his own work could not be done without wood fuel, there was no similar necessity for burning it in the making and dyeing of cloth, which could be done at Cranbrook more cheaply with Newcastle coal, brought overland from Maidstone or Newenden To convince the Council, Brown submitted samples of the material worked in Cranbrook to four London clothiers, who certified that "this wool of these several colours" may be dyed with seacoal as well as with wood, or better. "We here in London", the certificate proceeds, dye wool, cloths, silks, and other

¹⁵⁴ The brewers, however, are mentioned, in a paper written by one William Dyoss in 1628, as being, with the blacksmiths, the only users of coal in London in "ancient tyme" (*Egerton MSS.*, 2533, f 24) Doubtless his statement was based on hearsay. In the seventeenth century, the beer brewers, like the soap boilers and the sugar refiners, used a better grade of mineral fuel than the "pancoal" which served for salt and alum making (*Addisonian MSS.*, 12496, f 87, and see above, p 336) As this better grade was not to be had in London during the Middle Ages, it may be doubted whether coal was used much in brewing before the sixteenth century.

¹⁵⁵ *The Request and Suite of a True-hearted Englishman*, in Tawney and Power, *Tudor Economic Documents*, vol iii, p. 144

¹⁵⁶ *S P D*, Eliz., vol cxxvii, no. 68

stuffs with seacoals, "by which we find many advantages both for profit and commodity".¹⁵⁷

Coventry had been for centuries a leading textile centre, and, during Charles II's reign, much cloth was "woaded, boyled, and maddered" to be made into hats and caps.¹⁵⁸ Richard Waterfall, a hatter of Coventry, told Commissioners appointed to investigate a dispute over a mine in Warwickshire that he "spends a greate quantitie of coles yearly".¹⁵⁹

The textile manufacture should probably be ranked among the half dozen seventeenth-century trades which absorbed the largest quantities of coal. Although the fuel costs in the production of cloth were a far smaller portion of the total costs than the fuel costs in other industries, such as lime burning or soap boiling (where, in turn, fuel costs were smaller than in salt or alum making), the textile manufacture was so overwhelmingly the greatest British industry under the Stuarts, that the total amount of fuel consumed in it may well have been greater than that consumed either in lime burning or in soap boiling, just as the total amount consumed in soap boiling may have been greater than that consumed in alum making.

Brewing also must be ranked among the chief coal-consuming industries before the Industrial Revolution.¹⁶⁰ In the latter half of the seventeenth century no London breweries could operate without supplies of coal, and some of the brewers purchased as many as 500 tons a year for carrying on their business.¹⁶¹ Fuel was needed not only for heating the vessels in which beer and ale were brewed, but also for distilling spirits or vinegar, and for refining cider and other beverages.¹⁶² It was needed, moreover, in preparing the materials from which these liquors were made. But the substitution of coal for wood in the drying of malt and hops presented a technical problem of some magnitude. We shall consider this substitution, therefore, under our third heading.

Trades in which the substitution of coal for wood involved technical problems

We have referred to the opinion that coal might transmit its unpleasant properties to beer or to cloth as a prejudice; and a prejudice it was, whenever, as in brewing or dyeing, the product was separated by means of a cauldron or vat from direct contact with the flames and smoke. Where, however—as in drying malt or in smelting metal—fuel had to be mixed in with the grain or the ore, the noxious, gaseous content of coal might

¹⁵⁷ S.P.D., *Charles I*, vol. ccclxiii, nos. 55-7; vol. ccclxxi, no. 23.

¹⁵⁸ V.C.H. *Warwickshire*, vol. ii, pp. 265-6.

¹⁵⁹ *Exch. Dps. by Com.*, 36 Charles II, Mich. 43.

¹⁶⁰ In France as well as in Great Britain (*Boislisle, Correspondance des Contrôleurs Généraux*, vol. iii, no. 1175).

¹⁶¹ P.C.R., vol. lviii, p. 116.

¹⁶² The casks in which the cider was put were scented by a mixture of brimstone, burnt alum, and water, "melted over hot coals" (Houghton, *op. cit.*, vol. i, p. 156).

really damage the taste or the quality of the product. While a rapid rise in timber prices led almost automatically—if gradually—to the general adoption of mineral fuel in trades like brewing or dyeing, there were a large number of industrial operations in which coal could not be substituted at all until some technical alteration had been made in the process of manufacture. It was necessary either to free the coal from its damaging properties, or to invent a device to protect the raw material from the flames and fumes.

When, in 1610, Sir William Slingsby and his partners petitioned for a patent to introduce mineral fuel in various processes, they distinguished between those manufactures in which pit coal had been successfully tried in place of wood, and those in which attempts at substitution hitherto had failed. In the first group they included all boilings—"Bear, Dies, Allom, Sea Salt", etc. In the second group they put the baking of "Malt, Brede, Brycke, Tyles, Pottes", and the melting of "Bell mettal, Copper, Brass, Iron, Leade, and Glass".¹⁶³ Already a share of human ingenuity was directed towards finding the technical alterations necessary before coal could become the universal fuel.

Attempts to dry malt in kilns with raw coal gave unsatisfactory results,¹⁶⁴ except in Pembrokeshire, where the smokeless anthracite proved an eminently satisfactory fuel for the maltster.¹⁶⁵ Straw served as the chief firing until about the middle of the seventeenth century, when maltsters in Derbyshire hit on a method of ridding coal of part of its gaseous content by reducing it to what they called "Coaks"—nothing more nor less than crude coke. Henceforth nearly all beer brewed in Derbyshire was made from malt dried with these "Coaks", which, until the end of the seventeenth century, were obtained almost exclusively from a special grade of hard coal dug near the town of Derby.¹⁶⁶ So successful proved the new process that Derbyshire beer was actually preferred to other brews, and became famous throughout England.¹⁶⁷ Scottish maltsters also made use, as early as 1662, of "charcoal made of pitcoal", but they preferred peat when it could be had.¹⁶⁸

As late as 1635, public "bakers and baking cookes" are said to have burned "noe other fewell but wood, which they obteyne att deere rates". Henry Sibthorpe was granted, therefore, a patent for a new oven which

¹⁶³ *Harleian MSS.*, 7009, f. 9.

¹⁶⁴ In 1635 one Sir Nicholas Halse received a patent for a new kiln, designed "principally for the Sweet and Speedy Drying of Mault and Hoppes by the use of Sea Coales . . . without touch of Smoake" (*Patent Specifications*, no. 85, see also *ibid.*, 71^b).

¹⁶⁵ Owen, *Description of Pembrokeshire*, pt. i, p. 87.

¹⁶⁶ Plot speaks of this process as if it were carried on also in Staffordshire (*Natural History of Staffordshire*, p. 128). At the end of the seventeenth century, coke of local manufacture was used for drying malt along the Lincolnshire coast (*Royal Soc., Philos. Trans.*, vol. xix, 1695-7, pp. 343 sqq.).

¹⁶⁷ Houghton, *op. cit.*, vol. i, pp. 108-9; Galloway, *History of Coal Mining*, p. 47; V.C.H. *Derbyshire*, vol. ii, p. 354. By the end of the seventeenth century hops were dried with any available fuel (Houghton, *op. cit.*, vol. ii, pp. 452-4).

¹⁶⁸ Birch, *History of the Royal Soc.*, vol. i, pp. 169-70.

one "may heat . . . with Seacoales, or any other Coales digged out of the Earth". Another patent for the same purpose was granted in the following year¹⁶⁹ These patents do not prove that no coal had been used in baking bread before 1635. Investigation shows that, in many cases, would-be inventors, in their desire to obtain patents, might swear to the absolute novelty of a process which did not contain a single new idea.

In baking bricks and tiles the technical problem would appear to have been less serious than in malting and bread making. Artisans succeeded in producing both bricks and tiles from clay burnt in the midst of a fire of raw coal. Biringuccio, the Italian author of one of the first important books on industrial technique, writes in 1540 that mineral fuel is employed in brick making, as well as in smith's work and in lime burning.¹⁷⁰ A decree of 1585 recommends the burning of coal in brick work near Alfeld in the Harz Mountains.¹⁷¹ One must doubt, therefore, whether it was strictly true (as Slingsby and his partners wished Privy Councillors to think) that the new fuel had never served the English brick makers before 1610. A method of baking bricks with coal was known to Rovenzon when he published his *Treatise of Metallica* in 1613, and in 1618 the Venetian ambassador describes in detail the process as it was then carried on, probably in the neighbourhood of London. "At the bottom of the kilns", he writes in a letter to the Doge and Senate, "they have a number of small furnaces for the sole purpose of lighting the fire, and when they pile the bricks and tiles they place a layer of coal dust between each tier in succession up to the very top of the kiln so that when the furnaces below are lighted, the fire spreads throughout, and when the coal is consumed the kiln remains seasoned, without the superintendence of anyone, while the bottom becomes cool long before the extinction of the flames above".¹⁷²

Although this process could arouse enthusiasm in a foreign diplomat, who must have been a novice in technique, an English inventor like Rovenzon was far less sanguine over the achievement. Newcastle coal, "as it is now used", he wrote, "doth many times spoyle much of the bricke-clampe, by making it run together in a lumpe".¹⁷³ In 1663, Sir Balthazar Gerbier, the well-known courtier, who attempted to present himself to the public as an expert on every subject from the principles of banking to the art of rhetoric, estimated in a book entitled *Counsel and Advise to all Builders*, that, out of every 20,000 bricks "burnt with Sea-

¹⁶⁹ Patent Specifications, nos 86, 94.

¹⁷⁰ *Protecnica*, Venice, 1540, cited Beck, *Geschichte des Eissens*, vol. II, p. 101. But at Calais in 1540 bricks were made with firewood, although lime to be used in the same construction work was made with coal (*Cal of Letters and Papers of Henry VIII*, vol. XVI, no. 98).

¹⁷¹ O. Hue, *Die Bergarbeiter*, vol. I, pp. 350-1. The method of brick baking with coal could hardly have been common knowledge, however, in sixteenth-century Germany. In 1763 Liége brickburners were brought to Bavaria to develop there the manufacture with mineral fuel (*ibid.*, vol. I, p. 344), so that the successful accomplishment of this operation must hitherto have been limited to certain areas.

¹⁷² *Cal S P Venetian*, 1617-19, pp. 320-1.

¹⁷³ *Treatise of Metallica*, 1613, p. 13.

coles", at least 5,000 were unfit for use.¹⁷⁴ Possible improvements in the process engaged the attention of inventors and men of science. They observed considerable differences in the damage done by different kinds of coal. Rovenzon pointed out that "bricks may bee made of pit-coal or stone-coal, or any other of the privileged fewels, better than with New-castle sea-cole". It was seen that some grades gave off a larger quantity of gas than others. "By lighting a pipe with the several coals", Houghton remarked, "a vast difference may be perceiv'd; that of soft coal giving a taste of the mineral, the other is pleasant as if lighted with paper".¹⁷⁵ The problem was to find a grade relatively free from gas, or to adopt some coal from which a large percentage of the gas could be removed without destroying the burning properties. Towards the end of the seventeenth century a mixture of "coal-ashes" with street sweepings or clay, known as "Spanish", often replaced ordinary coal in the brick kilns—and evidently to good purpose.¹⁷⁶ For, in considering causes for the great expansion in the Newcastle trade between 1634 and 1674, Petty lays special stress upon the increase in the number of bricks burnt with coal.¹⁷⁷

According to Plot, seven tons were needed to burn a clamp of 16,000 bricks; and, as it required 9,000 bricks, and nearly two tons of lime, to make one square rod of a wall two feet thick, it is evident that building operations were bound to involve a heavy consumption of coal.¹⁷⁸ The quantity used in brick making varied greatly as between kilns. The stiffer the clay, the greater the quantity of fuel. In general one ton of coal or "Spanish" could replace two wagonloads of wood. There is little reason to doubt that, before the end of the seventeenth century, most English brick making, and doubtless the baking of nearly all pottery and earthenware, was undertaken with the help of a coal or cinder fire.

Tobacco pipe makers are known to have employed coal early in the seventeenth century. Nearly a ton was consumed in baking 24 clay pipes by the method used in this manufacture at Broseley. The process undoubtedly involved a good deal of breakage.¹⁷⁹ Some time before 1639 the London Company of Pipe-makers began to pay an annual salary of £40 (by no means poor remuneration in those days) to a man who instructed the members "how to burn with seacoal; whereby a great quantity

¹⁷⁴ Gerbier, *Counsel and Advice to all Builders*, 1663, pp. 52-3.

¹⁷⁵ Houghton, *op. cit.*, vol. i, p. 119.

¹⁷⁶ *Ibid.*, vol. 1, pp. 186 sqq. "By that shift", wrote Defoe (*The Complete English Tradesman*, 1726, vol. i, p. 35), the brick makers "save eight chaldrons of coal out of eleven".

¹⁷⁷ Petty, *Political Arithmetic*, 1690, p. 99.

¹⁷⁸ Plot, *op. cit.*, p. 128 sqq., Gerbier, *op. cit.*, pp. 55-61. In Staffordshire the brick makers continued to burn raw coal as it came from the pit. Defoe (*loc. cit.*) implies that 11 chaldrons served to burn 100,000 bricks. Gerbier (*op. cit.*, pp. 52-3) says that 15 loads of wood were required to burn a clamp of 20,000 bricks. According to Houghton, "sometimes they have been better burnt with two chalder and a half [3½ tons] than at other times they have been burnt with ten chalder (13½ tons)".

¹⁷⁹ As Professor Gay suggests to me. See *V.C.H. Salop*, pp. 440-1. Twenty-four was the maximum number of pipes that could then be baked at once in a single kiln.

of wood was preserved."¹⁸⁰ Charles II incorporated the company on the understanding that the members should use only mineral fuel.¹⁸¹

That was the basis upon which Mansell and his partners received in 1615 their well-known patent for the exclusive manufacture of glass in England. The problem of substituting coal for firewood in this manufacture had apparently concerned King James himself, and a sum of £5,000 is said to have been spent on preliminary experiments.¹⁸² Coal was first successfully burned in a glass works before 1612. "Very lately", wrote Sturtevant, in his *Metallica*, which was published in that year, "by a wind furnace green glass is made as well by pit-coale at Winchester House in Southwark as it is done in other places with much wast and consuming of infinite stores of billets and other wood-fuel".¹⁸³ The change from wood had been made possible by closing the clay pots, or crucibles, in which the potash and sand were melted down, so that the glass need not come into direct contact with the fire in the furnace. This invention was attributed to Thomas Percivall, one of the partners in the Mansell patent of 1615.¹⁸⁴ "We could not heretofore be induced to believe", one reads in the preamble to a preliminary patent granted in 1614, "that it would ever have been brought to pass as we are assured thereof by plain and manifest demonstration, several furnaces . . . now being at work".¹⁸⁵

The first successful experiments were made with Scotch coal, which, as has been explained already, was relatively free from noxious gases. For several years the glaziers regarded Newcastle "seacoal" as altogether too sulphurous to be of service. Owing to the high cost of importing fuel from Scotland, Mansell attempted to melt glass with Welsh anthracite in a furnace which he had erected near Milford Haven, and he also tried to carry on a manufacture near the river Trent in Nottinghamshire, where the mines yielded a mineral somewhat similar to that found near the Firth of Forth. But the cost of transporting the finished glass from Wales or Nottingham to London outweighed all the advantage which could be obtained from lower fuel costs near the collieries. "For his last refuge", if we may credit a story inspired by Mansell himself, he "was enforced . . . , contrary to all men's opinions, to make triall at New-castle upon Tyne, where, after the expense of many thousand pounds, that worke for

¹⁸⁰ *Cal. S.P.D.*, 1639, p. 384. *Exch. Spec. Com.*, no. 4242, deals with pipe making in London.

¹⁸¹ *Cal. S.P.D.*, 1663-4, p. 126. As in brick making, about 20 per cent of the product was unfit for use (*V.C.H. Salop*, pp. 440-1). Towards the end of the seventeenth century, tobacco pipes, like bricks, were usually baked in a "cinder", rather than in a raw coal, fire. "I presume", wrote Houghton, (*op. cit.*, vol. i, p. 205), "coals that smoke will spoil colour".

¹⁸² *Pat. Roll* 11 James I, pt. xvi, no. 4; cited *V.C.H. Surrey*, vol. ii, p. 301.

¹⁸³ S. Sturtevant, *A Treatise of Metallica*, 1658 ed., p. 4. Dud Dudley, writing fifty years later, claimed that glass melting with coal had been first successfully accomplished at Dudley (*Metallicum Martis*, 1665, p. 35). Hartshorne thinks some coal must have been used in the glass furnaces as early as 1608 (*Old English Glasses*, p. 182). The first patent which mentions the use of coal, is that granted to Slingsby in 1610 (see above), and it is certain that the process could have had little commercial importance before that date.

¹⁸⁴ *Pat. Roll* 12 James I, pt. iii, no. 9; as cited *V.C.H. Surrey*, vol. ii, p. 301, where a good account of these patents may be found.

¹⁸⁵ *Pat. Roll* 11 James I, pt. xvi, no. 4, "cited" as above.

Window-glasse was affected with New-castle Cole".¹⁸⁶ Before 1624 it had been found feasible to make white glass, crystal glass, and all other kinds of glass, with common "seacoal"

Not all the glaziers, of course, abandoned wood fires immediately after the proclamation of 1615.¹⁸⁷ Eventually, however, economic law came to the aid of statute law: the rising price of timber made the costs of the older fuel prohibitive, while it was found that better glass for daily use could be produced with coal than with wood. Before 1700 coal must have been almost the only fuel burned in all the British glass works. At a furnace in Nottinghamshire belonging to Sir Percival Willoughby, from 500 to 600 tons of coal had been thought necessary in 1615 for the production of 800 cases, or 80 tons, of glass—one year's output. As in boiling down salt and baking bricks, the amount of coal consumed varied according to the nature of the raw product. "Broad glass spendeth both more coales and asse [ash], quantitie for quantitie, then drinking glass dothe".¹⁸⁸ Perhaps one would not be far wrong in estimating the annual consumption of coal in glass manufacture just before 1700 (when there were 90 furnaces in England and probably a score or more in Scotland¹⁸⁹) at more than 50,000 tons.

When we remember that at least 300,000 tons more were probably burned in the manufacture of salt, that metal work, lime burning, textiles, brick making, and brewing each required tens of thousands of tons every year, that the firing of tobacco pipes, earthenware and pottery of all kinds, the making of soap, starch, and candles, the public baking of bread, the production of alum, copperas, saltpetre, and gunpowder, all involved heavy expenditures for coal, it hardly seems an exaggeration to estimate the coal annually burned in manufactures at nearly a million tons before the eighteenth century. Thus approximately a third of all the fuel mined in Great Britain was consumed in native industries, at the very time to which Macaulay referred when he said that coal was little used in manufactures.

Judged by modern experience, one-third of the output of coal seems but a small proportion to use for industrial purposes. Of the 183,000,000 tons consumed in Great Britain in 1913, more than four-fifths was burned in industry. If a survey shows that, in the late seventeenth century the proportion was vastly smaller, this must not be taken to indicate that at that time manufacturers generally burned firewood, turf, or peat rather than coal. What it shows is that the demand for fuel of all kinds in industry was relatively unimportant in comparison with the demand to-day.

¹⁸⁶ S.P.D., *James I*, vol. clxii, no. 63 (printed Hartshorne, *op. cit.*, pp. 426-31). See also the answer to Mansell as given in S.P.D., *James I*, vol. clxii, no. 64 (printed Hartshorne, pp. 423-6).

¹⁸⁷ Cf. *Acts of the Privy Council*, 1615-16, pp. 469-70, 471-2.

¹⁸⁸ H.M.C., *Report on the MSS. of Lord Middleton*, pp. 500-1. It is estimated that the cost of coal for the furnace will be £125 for the year. As "everie rooke of coales" cost 5s 6d., and as a "rooke" was slightly more than a ton, I have concluded that from 500 to 600 tons was probably burned at such a furnace.

¹⁸⁹ See above, p. 309.

England was not yet the home of the steam engine and the express train. Gas and electricity had still to be invented. Nearly half of all the coal consumed in industry in 1913 went into channels—railways, coasting steamers, pumping engines, gas works, etc.—for which there was no equivalent in the seventeenth century. Were we able to carry our calculations back to the reign of Henry VIII, and to estimate the quantity of wood, turf, and peat then consumed, we should find that manufacturing processes absorbed a far smaller proportion of all fuel produced than in the reign of Charles II. If the country used two-thirds of its fuel for household purposes in 1688, it may well have used five-sixths in 1550. What is astonishing is the great quantity of coal burned in industry a century before the Industrial Revolution is supposed to have taken place.

Once the technical obstacles had been overcome, coal might be substituted for wood in an industrial process even more rapidly than in the domestic hearth. For where, as in malting or glass making, the product from a kiln or furnace heated by coal was found to be superior in quality to that from one heated by wood, an actual premium was put on the use of mineral fuel. No amount of rhetoric, on the other hand, could persuade our ancestors, any more than it can persuade us, that coals make as pleasant a fire in the drawing room or the bed chamber as do logs. While there were Londoners who maintained that seacoal fumes counteracted the city smells of sewage, these fumes remained, as Smollett said, “a pernicious nuisance to lungs of any delicacy of texture”. So long as men could afford the luxury, they clung to wood fires. The difference between the price of wood and coal was generally great enough to oblige the majority of householders to burn coal; but it is almost certain that, in trades where the substitution involved no technical problem, or where the technical problem had been completely solved, it required a smaller advantage in the price to induce the artisan than to induce the householder to change his firing. After the Restoration a brick maker had to pay about twenty shillings to purchase enough firewood to give him the equivalent in heat of one ton of coal.¹⁹⁰ As soon, therefore, as mechanical improvements made it possible to produce satisfactory bricks in coal-heated kilns, the brick maker was forced by competition from his rivals to purchase mineral fuel (or “Spanish”), wherever he could get it for less than twenty shillings per ton, as he could in London, Dublin, Cambridge, Leicester, York, Birmingham, Edinburgh, Glasgow, and in nearly every district where there was any considerable concentration of population or of industry.

Before 1700 the substitution of coal for firewood had relieved the pressure upon timber supplies in England, except in those localities where metallic ores were smelted. While Evelyn could warn the nation that, to strengthen its naval power, it must look to the planting of trees,¹⁹¹

¹⁹⁰ Two loads at 10s. the load (Gerbier, *Counsel and Advice to all Builders*, 1663, pp. 52-3)

¹⁹¹ *Sylva*, 1664, p. 108.

while the Crown continued to show concern over the inroads made upon the woodlands,¹⁹² the danger of exhaustion, as reflected in the writings of persons concerned with economic affairs and in the actual price of timber, was an issue far less ominous in the decade from 1690 to 1700 than in the decade from 1600 to 1610. A French visitor, well informed on many questions, could write in 1698 of the abundant forests, and could argue that the use of coal by the English could not be ascribed to any lack of wood.¹⁹³ "I do not find logs especially dear", he added. While the price of firewood had increased so much more rapidly than the price of commodities generally during the century preceding the Civil War, that, according to Wiebe's index numbers, the ratio of the former to the latter had risen from about one to about 2·6, firewood was certainly no dearer relative to the general price level at the end of the seventeenth century than on the eve of the struggle between Crown and Parliament.¹⁹⁴ Houghton and others found it possible to advocate the destruction of the forests as being useless ornaments to a country that had begun sometimes to talk in terms, so common in our day, of pure economic efficiency.¹⁹⁵ Their advice apparently did not go unheeded; the timber shortage had been so much eased by the adoption of the coal fire that Defoe, in commenting upon its use in the upper rooms of London taverns, could write: "It is not immaterial to observe what an Alteration it makes in the Value of those Woods in Kent, and how many more of them, than usual, are yearly grubbed up, and the Land made fit for the Plough".¹⁹⁶

Gregory King, in 1696, estimated the value of all timber annually felled in England at £1,000,000, less than half of which was consumed for firing.¹⁹⁷ If we assume that it cost on the average about 20 shillings to buy enough firewood to obtain the same heat value as could be obtained from one ton of coal,¹⁹⁸ then it is clear that the timber annually burned for fuel in England was equivalent to about 500,000 tons of coal. As nearly 3,000,000 tons of the latter were probably burned in Great Britain at this time,¹⁹⁹ it is evident that coal must already have been of over-

¹⁹² Cf. R. G. Albion, *Forests and Sea Power*, 1926, esp. chap. v.

¹⁹³ H. M. de V., *Mémoires . . . par un voyageur en Angleterre*, p. 196 .

¹⁹⁴ G. Wiebe, *Zur Geschichte der Preisrevolution des 16 und 17 Jahrhunderts*, 1892, p. 375

	1451- 1500	1633- 1642	1643- 1652	1653- 1662	1663- 1672	1673- 1682	1683- 1692	1693- 1702
General Prices	100	291	331	308	324	348	319	339
Price of Firewood .	100	780	490	662	577	679	683	683

These figures are naturally very imperfect, and the fluctuations in timber prices from decade to decade appear to be impossibly wide, but they may be taken to show that the price of firewood remained fairly stable after 1642.

¹⁹⁵ See above, p. 316.

¹⁹⁶ Defoe, *Tour*, 1748 ed., vol. i, p. 138.

¹⁹⁷ King, *Natural and Political Observations*, in Chalmers, *Comparative Strength of Great Britain*, 1804 ed., appx., p. 53.

¹⁹⁸ See above, p. 346.

¹⁹⁹ Not much more than 200,000 tons was shipped to Ireland and abroad.

whelmingly greater importance than firewood in the economy of the British people.²⁰⁰

"Coal is one of the greatest sources of English wealth and plenty", writes Monsieur Ticquet in his letter to a Frenchman concerning the industrial progress which he observed across the Channel. Although written in 1738, some time after the period with which we are specially concerned had ended, this report would appear, from what we know of the use of coal in industry, to apply almost equally well to conditions at the end of the seventeenth century. "I regard it", he continues, "as the soul of English manufactures. . . . Here coal serves for all the domestic uses for which we employ wood—whether for the hearth, the kitchen, or the laundry. Bakers and pastry cooks heat their ovens with it. Brewers, sugar refiners, dyers, hatters, confectioners, distillers, who are here very numerous, vinegar and soap makers and bleachers of linen cloth heat their boilers with it. In a vinegar factory in London there are £40,000 worth of boilers and other vessels. The window panes, which are more beautiful here than in France, the whitest cut glass, the drinking goblets, and the mirrors are melted with no other fuel than coal. Carpenters never employ planks, even when they were cut ten years before, unless they have been dried in a sort of stove by this mineral. Coal is burned to bend not only planks but also the largest beams used in shipbuilding. Coopers have no other fire. Ordinary pottery and earthenware are baked with coal. You know that they bake their bricks with coal in Flanders and even in the neighbourhood of Marly. But, as the use of bricks is far more extensive in this country than in Flanders, they make different kinds, which they bake in ovens of different forms, of which I will bring you the designs. All workers in iron and in copper make use of coal. . . . I explored the shires between Monmouth and Warwick, filled as they are with iron and copper manufactures, in the company of my [English] friend, who was well content to show me the wealth of the workers in this district. I observed with surprise the skill of these artisans and the comforts they enjoy. Their villages seemed to me as well built as the finest towns in Flanders, and I think they are richer. The prodigious consumption of provisions brought into the markets astonished me greatly. . . . I noticed . . . a large number of processes which are unknown to our workers, notes of which I will show you in Paris. It is astonishing with what ease they make their ironmongery and the small jewelry which they send to India".²⁰¹

²⁰⁰ King's estimate leaves Scotland out of account. There can be little doubt that in the more populous parts of that kingdom coal was quite as generally used for fuel as in England.

²⁰¹ *Archives Nationales*, O¹1293.

ELI F. HECKSCHER

Mercantilism

From ENCYCLOPEDIA OF THE SOCIAL SCIENCES, Volume X, Pages 333-339. New York: THE MACMILLAN COMPANY, 1933.

Mercantilism

Mercantilism, originally a term of opprobrium, lacks the clear cut meaning of an expression coined for purely scientific purposes. Used sporadically by the French physiocrats, the term was brought into general currency through Adam Smith, who devoted about one fourth of *The Wealth of Nations* to a relentless criticism of what he termed "the commercial or mercantile system." His attack started with the views of money which he attributed to the mercantilist writers; but the greater part of his discussion referred to commercial policy and consequently treated mercantilism as a system of protection. More than a century later in 1884 a greatly different use of the word was introduced by Gustav Schmoller in his essay, *Das Merkantilsystem in seiner historischen Bedeutung*. In Schmoller's opinion mercantilism was essentially a policy of economic unity—to a large extent independent of particular economic tenets—expressing the efforts of territorial princes, German in the first place, to overcome the disruption caused by mediaeval conditions. In England at about the same time William Cunningham in *The Growth of English Industry and Commerce* (1882) viewed mercantilism still differently as the expression of a striving after economic power for political purposes manifesting itself particularly in England. The discordance between these views was principally due to a confusion between the ends and means of economic policy; each of them pointed to something of fundamental importance in the development of economic activities and ideas in the period between the Middle Ages and the industrial revolution.

If one considers mercantilism first as a system of national economic unity, it is quite clear that there was an enormous task awaiting the rulers of most continental states at the end of the Middle Ages. Under feudalism independent petty rulers and even quite ordinary private land-owners had usurped the power of the state, harassing and impeding trade and industry and laying both under contribution for their own benefit. Among the numerous manifestations of this tendency the most important was perhaps the almost endless confusion caused throughout Europe by tolls on rivers and highways as well as by the impediments placed on trade between different provinces. An English chronicler, William Wykes, speaking of conditions in the late thirteenth century referred to *furia teutonicorum insania*, "the wild madness of the Germans", but the condition was quite as widespread in France. On all the great rivers there were separate tolls for each ten or at most fifteen kilometers, which the trader had to pay in succession. The work of

unification necessitated the doing away with all this and the creation of national customs systems.

In England, where very little of this confusion had ever existed, unification was achieved in the course of the thirteenth century; but on the continent progress was slow and very little was accomplished before the nineteenth century. By far the most important success was scored by Colbert in France through his tariff of 1664. This tariff did away with most of the duties separating from one another the provinces constituting the so-called *cinq grosses fermes*; something like three-eighths of the French monarchy was thus made into a single customs territory. But this was in respect only of interprovincial customs. With regard to river and highway tolls Colbert was able to achieve very little; and the customs boundaries between the rest of the provinces he left entirely untouched, with the result that areas conquered about the middle of the sixteenth century were treated as foreign territory from a customs point of view until the French Revolution. Nevertheless, the French tariff of 1664 was almost the only important measure in the direction of customs unification carried out under mercantilism, although Colbert for one was quite aware of the connection between the work of unification and mercantilist aims in the fields of money, foreign trade and colonization.

Throughout this period the towns had a well thought out and surprisingly consistent policy, which also tended to split up the unity of a state's territory. Each town attempted to subject the adjacent countryside to its control and to hamper in every possible way the trade of competing towns. Mercantilist policy involved the substitution of a scheme which would give the whole territory the benefits that each town had tried to arrogate to itself. The direction of town policy need not necessarily be changed, but its scope must be enlarged from a municipal to a national field.

One such victory of national policy is to be recorded in the famous act of Queen Elizabeth of England—or of her minister William Cecil, Lord Burghley—the Statute of Artificers...and Apprentices (1562). Besides Colbert's unifying tariff of 1664 it is perhaps the only successful achievement of mercantilism in the field of economic unity. Based upon legislation which went back to the Black Death, it created a consistent national system of regulation of internal trade and industry in town and country alike, which lasted on paper until the early nineteenth century (1813-14). The positive importance of this measure consisted in its national scope. There was nothing in it favoring the towns at the expense of the countryside, and it did nothing to perpetuate the craft guilds, the typical products of town policy and economy. The guilds were thus prevented from becoming a component part of the trade regulatory system, a circumstance which contributed to weakening the hold of the mediaeval order. Otherwise the factors working for

economic change had little relation to mercantilist measures, in England as in other countries. The statesmen of late Tudor and earlier Stuart times made unusually successful attempts to revive the old system of regulation, but that very fact worked in the direction of undermining it when the parliamentary party became victorious.

The importance of this development becomes clear when the French parallel is studied. For in France mercantilism accepted and tried to nationalize the mediaeval system. By the edicts of 1581, 1597 and 1673 the guilds were made compulsory throughout the country even outside the towns, and although these measures came far from achieving their purpose, the whole mediaeval system of regulation was given through them a new and wider lease of life. At the same time the craft guilds remained as exclusively local as they had ever been, so that labor and industry were prevented from flowing freely between the different parts of the country. This was probably one of the reasons why the industrial revolution began in England instead of France. French mercantilism saw the rise of a very extensive civil service engaged in industrial as well as other types of supervision, while England had not even the semblance of such a body. The famous *règlements*, issued at an ever increasing rate from the time of Colbert onward, all perpetuated the mediaeval treatment of industry. A great deal was thus achieved in the perfecting of production on the old lines; but the development of the characteristic aspect of modern industry, mass production for mass consumption, was hampered rather than furthered through the most effective and consistent forms of mercantilist regulation.

The situation was somewhat different in the field of international trade and business organization in general. On the double foundation of private partnerships, mostly of Italian origin, and mediaeval merchant guilds there arose a network of new business corporations, of which the English were more important for later developments, although the Dutch were at one time more powerful. The distinguishing feature of the so-called regulated companies in England which proved so remarkably successful in Atlantic, Mediterranean and Baltic trade was that each merchant traded for himself, although under the rules of the company and with the use of its organization. These chartered companies paved the way for the joint stock company, the direct ancestor of the most important of all modern forms of business organization, the corporation. For the history of mercantilism the important question is to what extent these developments were due to mercantilist policy. In Portugal, Spain and France the chartered companies and the organization of foreign trade and colonization in general were the outcome of state initiative; but in Holland and England, the two important countries in this field, the trading companies were created by private merchants. The state confined itself to giving them more or less extensive privileges, for which they often had to pay dearly, one of which

was the preventing of others from use of the more advanced joint stock form of organization. In 1719 the English Parliament passed the Bubble Act, which was intended to check a general growth of company organization and may have achieved at least part of its object. Altogether it is far from clear that the remarkable development of company organization was to any great extent due to mercantilist policy in those countries where it was most important.

The results of mercantilist activity in overcoming the disruption caused by mediaeval conditions were thus rather limited. The laissez faire era may even be considered its executor in this respect. Through the influence of the French Revolution in other countries as well as in France and through the rise of new ideas in the field of economic policy the end of the eighteenth and the first half of the nineteenth century saw changes introduced without much difficulty for which mercantilist statesmen had been striving in vain for several hundred years.

But efforts in the direction of economic unity were only the frame of mercantilist policy. The next question must be, for what purposes mercantilist statesmen wanted to use the resources of a unified state. The answer is, principally for strengthening the powers of the state in its competition with other states. While the mediaeval conception of the object of human effort was the salvation of human souls and while economic liberalism, or laissez faire, aimed at the temporal welfare of individuals, mercantilist statesmen and writers saw in the subjects of the state means to an end, and the end was the power of the state itself. The foremost exponent of this aspect of mercantilism was Colbert; but he had counterparts everywhere. The British navigation laws as well as the old colonial system were its most lasting results. Combined with a static view of economic life this doctrine was responsible for the perpetual commercial wars of the later seventeenth and the eighteenth century, culminating in Napoleon's Continental System and the British Orders in Council of 1807. For if power was the object of economic policy and if the total fund of economic power was given once for all, the only method of benefiting one's own country was to take something away from someone else. Nobody has pointed this out with greater logical incisiveness than Colbert; and, conversely, David Hume in his criticism of mercantilism turned against just this "jealousy of trade."

It soon becomes clear, however, that the characteristic features of this policy resulted less from the striving after power in itself than from the views of its exponents as to the proper means for attaining power or prosperity. Only at this point do we reach the real economic import of mercantilism, what constitutes it an economic tenet and what reveals the fundamental differences between mercantilists and their predecessors as well as their successors. Adam Smith, for example, was entirely in accord with mercantilist aims when he wrote that "defence is of much greater importance than opulence"; the only difference was that he laid

much less stress than earlier authors upon that aspect of the problem. The extent to which mercantilists and laissez faire economists were in agreement with regard to ends is suggested by a comparison of the title of Adam Smith's famous work with that of the most important book belonging to German mercantilistic literature, the *Politischer Discurs von den eigentlichen Ursachen des Auf- und Abnehmens der Stadt, Länder und Republiken*, by Johann Joachim Becher (Frankfort 1668, 2nd ed. 1673). Only slight shades of meaning distinguish this title from that of the bible of laissez faire. But in their view of the relations between means and ends two books could hardly be more unlike. There lies the most distinctive feature of mercantilism.

The mercantilist conception of what was to a country's advantage centered on two closely allied aspects of economic life—the supply of commodities and of money. These doctrines are best considered separately.

It was possible to regard commodities in a purely neutral way as something to be bought or sold and neither in preference. This was the merchant's point of view; as a German author (Laspeyres) has well said with regard to the Dutch: "The merchant was a free trader in every direction; he wanted no limitation of exports, in order to send out large quantities of goods, no obstacles to imports, in order to take in large quantities; finally no hampering of transit trade, in order both to import and export large quantities." This was what might be called the staple policy of the mediaeval towns, developed first in Italy and Germany, that of drawing trade in both directions to the town itself and away from all competitors. A late but important outcome of this was the old colonial system making the metropolis an *entrepot* of colonial trade, an idea which culminated in the British Orders in Council of 1807. Important as this tendency was during many centuries of European history it could, however, never triumph completely as it appealed only to a small minority in every community. Instead two other and entirely opposing views came in succession to dominate commercial policy.

The prevalent mediaeval idea had been that a community should aim at the securing of plenty, as Francis Bacon pointed out in his *History of Henry VII* in saying that that monarch was "bowing the ancient policy of this estate from the consideration of plenty to the consideration of power." The result was the setting up of obstacles to exports and the facilitating of imports. Throughout the Middle Ages export prohibitions were innumerable in most countries, while import prohibitions were very scarce. Commercial treaties aimed at securing imports, exports being granted as a favor, in one case it was even required that goods manufactured from raw materials set free for export should be sent back.

It was in criticisms of the prevalence of export prohibitions that the new attitude that was to become typical of mercantilism first found

utterance. In *A Discourse of the Common Weal of Thys Realm of England* (1581; ed. by E. Lammond, Cambridge, Eng., 1893), probably written in 1549 by John Hales, one of the most intelligent of mercantilist writers, it was shown at some length and quite clearly how the prevention of exports counteracts its own aim through hampering the production of the commodities in question, while free exports would result in increased production. Mercantilist thought here showed an advance over mediaeval ideas in its ability to take a long view and to disprove the belief that consumers profit by everything which creates momentary plenty. The same trend of thought appears in a well known sentence by Thomas Mun, in *England's Treasure by Foreign Trade* (reprinted Oxford 1928) written about the end of the 1620's and published posthumously in 1664. Referring to export of bullion he writes: "For if only we behold the actions of the husbandman in the seed-time, when he casteth away much good corn into the ground, we will rather accompt him a mad man than a husbandman; but when we consider his labours in the harvest, which is the end of his endeavours, we find the worth and plentiful encrease of his actions." This view of economic life reappeared in the nineteenth century in the teachings of Friedrich List as well as in the "infant industry argument" of John Stuart Mill.

But it did not in itself mean a changed attitude toward the supply of commodities. Mercantilists went much further, however, turning against "a dead stock called plenty," not only for the moment but for the long run period. They came to look upon a plentiful supply of commodities within a country with as great disfavor as mediaeval statesmen had regarded a depletion of commodities. The great object became to *décharger le royaume de ses marchandises*, stimulating exports and hampering imports by every conceivable means. Only thus was a country believed to become "rich"; Sir William Petty characteristically wrote in 1662, and Sir Josiah Child repeated a few years later, that Ireland, "exporting more than it imports, doth yet grow poorer to a paradox"—the opposite result was considered the only natural one. According to this view production must be stimulated to the utmost, but products kept out and sent away. The most difficult problem was the relative treatment of the different factors of production. A natural solution was to retain goods in accordance with their importance to production or with their character as raw materials; but these points of view were very largely discordant and a consistent policy was therefore impossible. On the other hand, it was possible to find a solution with regard to one of the prerequisites of production; namely, labor, as that was not "produced." The result was encouragement of population increase, of child labor and of low wages as a method of stimulating production and increasing the competing power of a country.

It goes without saying that the mercantilist treatment of the supply of commodities was not the outcome of theoretical speculation, al-

though such speculation later developed. How far back the policy of hampering imports went it is difficult to say, but the first known traces of the new policy date from the beginning of the thirteenth century in the towns of north Italy, especially Venice. It passed to the Netherlands about the middle of the following century and to France and England a century later, Edward IV being perhaps the first English ruler wholeheartedly to embrace protection.

Mercantilism in the sense of a policy and doctrine of protection represents the most original contribution of the period in question to economic policy and the one which has retained more sway over men's minds than any other. Various causes contributed to this great change from mediaeval ideas; the most influential apparently was the growing importance of money economy. So long as commodities were mostly exchanged against one another, it was clear to the meanest capacities that nothing could be gained by receiving little in exchange for what you gave away but quite the reverse. When, however, all exchange transactions were overlaid by the cloak of money, the workings of economic life became infinitely more difficult to understand; and then it was easy to believe that commodities were a nuisance and a danger, especially as a cause of unemployment. Although this view was first held with regard to manufactures it spread over the whole economic field, in England coming from a comparatively early date to embrace even food products. As a money economy still survives, it is natural that the mercantilist view of commodities should also have survived when the rest of mercantilism lost its influence, although the ruthless consistency of laissez faire obliterated this too for a short time from men's minds.

So far no mention has been made of the mercantilist views of money. In the opinion of Adam Smith and his followers, however, the real gist of mercantilist doctrine was expressed in the statement "that wealth consists in money, or in gold and silver." From this point of view mercantilist insistence upon an excess of exports over imports—the flow of bullion and money omitted from consideration—was explained as inability to distinguish between money and wealth. It is easy to find in mercantilist literature and state papers an almost unlimited number of utterances supporting that interpretation. But the fact that in recent times the policy of protection has retained or regained its sway, although little is now heard about the necessity for an inflow of precious metals, indicates that protection is the more fundamental tenet. In the mercantilistic period, however, the two cooperated harmoniously.

The differences between an earlier and later policy with regard to exports of money have led to the drawing of a distinction between bullionists and mercantilists proper. The former wanted to prohibit the outflow of bullion, while the latter brought forward a theory of the balance of trade and saw in an excess of exports over imports of com-

modities the only possible means of increasing the monetary stock of a country without mines of precious metals. The distinction was certainly important not only for economic policy but perhaps even more as an expression of a general concept of society; but it is also true that both schools were in agreement as to the benefits of a large stock of money. Such a view is indeed very old; what mercantilism did was to bring the rest of economic policy into harmony with it and to elaborate many ingenious although usually mistaken theories to fortify it. The mercantilist theory of money was elaborated principally by a host of English writers in the seventeenth century, foremost among whom were Thomas Mun, Sir William Petty, Sir Josiah Child, John Locke and Charles Davenant; outside England there were few besides Bernardo Davanzati, Antonio Serra and Jean Bodin, the German writers contributing little of an original character in this field.

It is of course a travesty of the real opinion of these writers to say with Adam Smith that they identified wealth—an income—with money; but they very often expressed themselves as if they did so, and that also is of importance. Otherwise their reasoning is as a rule easy to follow, which does not mean that it is correct. Believing that consumption in itself was of no value they came by easy strides to the conclusion that only an excess of income over expenditure increased the riches of a country and that such an excess could consist only in an inflow of precious metals from abroad. Locke is perhaps more suggestive than any other writer on that point. From this followed naturally insistence upon an increased stock of money even by writers who could not explain to what use the money should be put or those who, like Petty, even believed in the possibility of a superabundance of money.

Most mercantilist writers and statesmen, however, insisted in the first place upon the use of money in circulation; this was in harmony with their general eagerness for trade and commerce, movement and exchange. Although the old ideal of cheapness, which was closely allied to that of plenty, held sway for a long time and perhaps never entirely lost its influence, most mercantilists were at heart inflationists. So far their eagerness for increased circulation was a foregone conclusion; for some form of the quantity theory of money was very widely held. One writer, Samuel Fortrey, found a happy expression for this aspect of mercantilism when he said in 1663: "It might be wished, nothing were cheap amongst us but only money." This view paved the way for the plausible theories of John Law (1705) and for paper money mercantilism generally. That new departure was in strict accordance with the fundamental tenets of the school but unexpected in its results, since under a paper money regime the precious metals would lose their specific importance and much of the theoretical foundation of mercantilist commercial policy disappear. Belief in the benefits of a rapid circulation was strengthened by arguments to the effect that countries with low

prices would have to "sell cheap and buy dear." In the hands of Law, who in this as in other respects could fall back upon Locke, this was elaborated into the doctrine that a plentiful supply of money within a country created a favorable rate of exchange. Almost the only writer showing a clear conception of the fact that rapid circulation by increasing prices became an obstacle to exports was Mun; but he did not follow out the conclusions, which would of course have been subversive of the whole body of mercantilist doctrine.

Lastly, mercantilism implied a general view of society, a fact which is often overlooked. This general attitude was closely akin to that of the successors of the mercantilists, the *laissez faire* philosophers, in almost all other respects their opposites. Both followed the general trend of modern opinion, replacing religious and moral considerations by belief in unalterable laws of social causation—a rationalism often accompanied by a strictly non-moral and non-humanitarian view of social life. The mercantilists were in agreement with *laissez faire* philosophers not only in basing their reasoning upon natural law, there are many likenesses as well as marked dissimilarities between the views of the two schools as to general social psychology, for example, between Petty and Hobbes on one side and Bentham on the other.

It is especially noticeable that mercantilist statesmen and writers believed in what was called "freedom of trade," or "free trade"; the utterances of Colbert to that effect are innumerable and in most cases quite seriously meant; sometimes it was even said that all interference with economic life should be avoided. How could mercantilists arrive at their practical measures from such premises? Certainly there is much inconsistency to be accounted for, but their fundamental view is quite clear. Unlike the *laissez faire* economists they did not base their advocacy of free trade and non-interference with economic life on the existence of a pre-established self-operating harmony. What they meant was that interference should aim at changing causes and not effects, that it was useless to punish unavoidable results without removing their causes. As a paradoxical but very typical mercantilist, Bernard Mandeville, wrote in 1714: "Private vices, by the dextrous management of a skilled politician may be turned into public benefits." The contempt of the mercantilists for religion and ethics, their desire to subject individuals to the state, their belief in a somewhat mechanical social causation without belief in a preestablished harmony, made them even more ruthless in their insistence upon setting aside all sorts of time honored customs and human needs and presented a strong contrast to the fundamentally humanitarian attitudes which followed. Moreover in this respect as in most others the ability of mercantilist statesmen to achieve what was required by their programs was very limited, and their attempts at directing economic life without violence remained

mostly on paper. In practice they had recourse to almost all the time honored methods of coercion.

Generally it may be said that mercantilism is of greater interest for what it attempted than for what it achieved. It certainly paved the way for its successors, and the discussions which went on throughout the seventeenth and the early eighteenth century eventually bore fruit, although chiefly through the criticisms they called forth. Great change in the society which mercantilistic statesmen had taken over from the Middle Ages did not occur; that was reserved for their successors.

PAUL MANTOUX

The Industrial Revolution in the
Eighteenth Century

*The Beginnings of Machinery in the
Textile Industry*

The Factories

*From THE INDUSTRIAL REVOLUTION IN THE EIGHTEENTH CENTURY, Part II, Chapters I and II, Pages 193-276.
London: JONATHAN CAPE, 1931.*

The Beginnings of Machinery in the Textile Industry

The use of machinery, even if not in itself a sufficient definition or explanation of the industrial revolution, remains at any rate the leading fact, in relation to which every other fact in that great historical process must be studied. And this is because every one of them was ultimately swayed by it and had to follow its movement and laws. But we must first be clear as to the meaning of the words we use. If we understand by machinery all artificial means of shortening or facilitating human labour, it would be difficult, if not impossible, to fix an initial date for the facts we mean to study.

I

From time immemorial man has been able to make tools for himself. This is one of the earliest, and perhaps one of the most fundamental, characteristics of the human race. But it is very difficult to say where a tool ends and a machine begins. A distaff or a hammer are certainly not machines, whilst a Jacquard loom is undoubtedly something more than a tool. But between these extremes there is room for doubtful cases. How shall we classify a pump or a spinning wheel? Can we define a machine as something which not only helps, but does away with and replaces, human labour? The answer is that the simplest tool saves a considerable amount of labour. A man with a spade will do as much work as twenty men who only have their nails to scratch the ground with. On the other hand the most perfect automatic machine does not entirely do away with the human element, for it needs a man to look after it.

Yet at this point a distinction becomes evident. The workman in charge of such a machine has to start it, stop it, feed it, and keep it in working order. But he has no part in the actual work it does, save to slow it down or to speed it up, or, at most, to see that it works smoothly without jerks or stoppages. His activity or negligence alter the quantity of work done by the machine still more than the quality. He does not do the work, but is only there to regulate and measure it. On the contrary, a tool is passive in the worker's hands; his muscular strength, his natural or acquired skill or his intelligence, determine production down to its smallest details. Can we put this difference into words by saying that the distinctive feature of a machine is its motor power? But supposing it was worked by hand, with a crank, would it no longer be a machine?

What would take place in that case is the reduction of the man himself to the part of a mechanical force. The machine, while using the strength of his arms, would render his hands unnecessary. And this it is which constitutes a machine. Instead of being a tool in the workman's hand, it is itself an artificial hand. It differs from a tool, not so much by the automatic force which keeps it in motion, as by the movements it can perform, the mechanism planned by the engineer's skill enabling it to replace the processes, habits and skill of the hand. A spinning wheel is hardly a machine, because even though it spins, the thread has to be drawn out by hand. A pump is a sort of machine, because, in order to make it work, it is only necessary to move the piston backwards and forwards, which can be done by mere brute strength. We can thus define a machine as follows: a mechanism which, worked by any motive power, executes the elaborate movements of a technical operation, which it had previously taken one or several men to do.¹

This definition easily disposes of many false examples, which would make the first use of machinery appear to go back to the most remote antiquity. We must nevertheless recognize that machinery was used long before modern times. The ancients not only had very complicated and powerful war machinery, but also industrial machinery, as, for instance, the water mill. The characteristic feature of recent economic life is not the occasional use of machines, but machine industry. This expression can be used either with reference to a particular industry, or to industry as a whole. Before it became universal, it was only a special, a local phenomenon. Even to-day, in spite of its immense development, there are still—even in the most highly civilized countries—many exceptions to it. The phrase 'machine industry' could not properly be applied to a branch of trade, merely because a machine is used to aid production; it must have become the essential factor in production, the factor which determines the quantity, the quality and the price of the products. From the sixteenth century, the iron industry had made use of machinery; forge hammers, worked at first by levers and later by water-wheels²; furnace-blown engines worked by water-wheels or by a gear attached to donkeys or horses.³ A little later metal lathes, automatic rolling mills and slitting mills made their appearance.⁴ Nevertheless, so long as, through lack of fuel, pig-iron could only be obtained in small quantities, and so long as bar-iron had to be laboriously hammered, machinery played only a

¹ This definition seems more satisfactory and more complete than that given by Reuleaux: 'A machine is a combination of solid parts, so contrived that by means of it natural forces can be made to cause certain definite motions.' F. Reuleaux, *Theoretische Kinematik*, p. 38.

² See the excellent woodcuts in *De Re Metallica*, by Georgius Agricola (Basle, 1546). English translation by H. C. and L. H. Hoover, 1912. A certain number are reproduced in Ludwig Beck, *Geschichte des Eisens in technischer und kulturgeschichtlicher Beziehung*, II, 147, 149, 479, 482, 483, 531, etc., together with similar illustrations taken from Vannuccio Biringuccio's *Pirotechnia* (Venice, 1558).

³ See Beck, *op. cit.*, II, 130–42.

⁴ See the plates in Diderot's *Encyclopédie*, Vol. IV, article 'Forges ou Art du Fer.'

secondary part in influencing the development of industry. Moreover, there are varying degrees of machine industry. Printing is obviously a machine industry, and was so from the start, but it has become even more so since rotary presses worked by steam or electricity have replaced the old-fashioned hand press. It is becoming even more of a machine industry, as the type-setting machine gradually relieves the compositor of the material part of his work.

Apart from printing, which is of interest in connection with the history of intellectual, rather than of economic, development, the textile industries afford the first instance of machine industry, taken in the most complete sense. The rapid transformation in the cotton industry, wrought by a succession of technical inventions, made it the earliest and also the classical example of modern large-scale industry. This explains why Schulze-Gävernitz, under the general title of *der Grossbetrieb*, produced what was simply and solely a monograph on the cotton industry. Even though its evolution, whose successive stages we are about to study, was so rapid, yet it did not take place without preparation. A close study will discover continuity of development under what seems the most startling change. Machine industry, like all other important facts, had its forerunners, which preceded it and heralded it from afar.

One of the most interesting, although its consequences were limited, was the invention in 1598 of the stocking frame, by a Cambridge graduate called William Lee.⁵ The stocking frame is undoubtedly one of those machines,⁶ which, as they perform a vital operation in an industry, cannot be introduced without creating in that industry a complete revolution. Can we wonder if the same unhappy destiny befell Lee, which later overtook so many other inventors? His machine was looked upon as a mischievous contrivance, which threatened to deprive a large number of workmen of their livelihood. This objection has been reiterated ever since, and even to-day it often delays (though it cannot now stop) the progress of industrial technique. Lee, forced to leave England, found refuge in France, where, thanks to the enlightened government of Henri IV, he established himself in Rouen with nine or ten workmen. But after the King's death the inventor, who had become as unpopular in Normandy as in England, and was moreover disliked both as a foreigner and a Protestant, was for the second time forced to give up his work. He went to Paris, where he just managed to live, and finally died utterly forgotten. His companions then went back to England and settled in the neighbourhood of Nottingham, where the invention had first been experimented

⁵ For what follows see W. Felkin, *History of the Machine-wrought Hosiery and Lace Manufacture*, pp. 23-31, and the article Lee (Wm.) in the *Dict. of National Biography*.

⁶ 'It is a very ingeniously contrived machine, made of polished iron, it is not possible to describe its construction here, because of the number and variety of its component parts, and even a person who sees it will find a real difficulty in understanding how it works.' (*Encyclopédie Méthodique 'Manufactures'*, I, 220.) The plates in Diderot's *Encyclopédie* (Vol. II, art. 'Métier à faire des bas') give, however, a fairly clear description of the stocking frame

with. There machine knitting, after this period of tribulation, was finally established.

By the following century it had almost entirely displaced hand knitting, and was already a machine industry with most of its usual consequences. It had certainly not resulted in the massing of workers in big workshops. The knitting frame, like the weaving loom, was used at home. But it was too expensive a machine for the workman to own himself. We therefore find that curious system in force, of which the main conditions have been described above⁷ The worker rented his frame, and this 'frame rent' was deducted from his wages. The capitalist, owner alike of raw material and implements, was all-powerful and made his power cruelly felt. Sometimes employers would hire workers without having any work to give them, simply in order to let out some idle knitting frames and secure the frame rent.⁸

This industry revealed a curious mixture of ancient and modern characteristics, some handed down from traditional industries, others the forerunners of impending changes. There was a corporation of stocking knitters, modelled on the guilds of the Middle Ages. Masters and workmen both belonged to it, affiliation was compulsory, and the number of entries was limited. Masters, journeymen and apprentices were all subject to a complicated system of customs and regulations.⁹ But these regulations, based on the industrial legislation of the sixteenth century, became a dead letter as soon as they went against the interests of the employer, who was the owner of all the implements and the dispenser of work. The rules which limited the number of apprentices were constantly violated, for the employer insisted on a plentiful and cheap supply of labour. In this industry we come across the first collective indentures of apprenticeship, by arrangement between manufacturers and parishes. It was a good opportunity for the parish to get rid of its workhouse children and it enabled the manufacturer to obtain free labour, and thus to force down the wages of adult workers.¹⁰ Thus, in spite of the survival of traditional forms, the budding influence of machinery grew stronger with

⁷ See *Journals of the House of Commons*, XXXVI, 635, 728, and the preamble to 28 Geo. III, c 55. 'Whereas the frames for making of framework-knitted pieces, stockings, and other articles and goods in the hosier or framework-knitted manufactory, are very valuable and expensive machines, and generally the property of the hosier or manufacturer, who lets the same to hire to his workmen or framework-knitters. . . .'

⁸ See *Journals of the House of Commons*, XXXVI, 742, and XXXVII, 370. This abuse was, until recently, a subject of repeated complaints. 'Rent of the machine is exacted by the employer whether the operative is given work or not. Thus, as the framework-knitters alleged, when they paid rent for their frames, the employers were tempted to spin the work over much longer periods than was necessary, doling it out in very small portions in order to keep them paying rent as long as possible. And the Macclesfield silk-weavers complain that they are kept always half-employed, the giver-out of work finding his advantage in getting it done on as many separate looms as possible, from each of which full week rent is derived.' B and S. Webb, *Industrial Democracy*, I, 317.

⁹ On this subject see a fairly complete study in Held's, *Zwei Bücher zur sozialen Geschichte Englands*, pp. 484 and foll.

¹⁰ Id., *ibid.* The Statutes of the Company of Framework Knitters, revised in 1744, are reproduced in the *Journals of the House of Commons*, XXXVI, 779-94.

a tendency to substitute mechanical processes for manual skill, and a crowd of labourers for a small number of artisans.

Another instance of the local development of machine industry, with limited results, is supplied by the silk industry. In fact its real beginnings must be looked for outside England, where the silk industry has never been more than partially acclimatized, and the invention which changed it so entirely was an Italian one.

The manufacture of silk materials in the last years of the seventeenth century had undergone rapid development in England. A colony of skilled workmen, driven from France by the repeal of the Edict of Nantes, had just settled in the suburbs of London, and the fame of the Spitalfields silk-weavers was beginning to spread. But English manufacturers had to face serious difficulties. Compelled as they were to buy their raw silk abroad—the British climate putting the cultivation of the mulberry leaf and the rearing of silkworms out of the question—it would have been to their advantage to make their own thrown silk (that is, the silk thread made by twisting together the filaments from the cocoons). But smugglers put such cheap silk thread on the English market that every one wondered how that thread could have been made.¹¹ Rumour said that in Italy there were machines for throwing silk. But no one had seen them, or knew how they were made. About 1702, a certain Crotchett, of Derby, attempted, without any ideas on the subject, to make one.¹² He failed, and Italian thrown silk continued to be smuggled into the country.

These machines did actually exist. No one knows when they were invented. What is certain is that they were described in a treatise on mechanics published in Padua in 1621.¹³ But this book, even assuming that it was ever known in England, had apparently been quite forgotten. As for the machines themselves, if we may judge from the mystery which at that time still surrounded the most insignificant manufacturing processes, they must have been jealously guarded. It was a difficult, if not a dangerous, venture to go to Italy and discover the precious secret, and it was only natural for the story of such an expedition to be later embellished with romantic details.

The journey was undertaken in 1716 by John Lombe¹⁴ He went to Leghorn and there succeeded, not only in seeing the machines, but in making his way into the building where they stood. With the help of an Italian priest, he secretly made some drawings and sent them to

¹¹ See Cooke Taylor, *Introduction to the History of the Factory System*, p. 358.

¹² A. Barlow, *History of Weaving*, p. 30.

¹³ Vittorio Zonca, *Nuovo Teatro di Macchine ed Edifici* (Padua, 1621), pp. 68–75 (with dates).

¹⁴ The traditional account is given by W. Hutton, *History of Derby*, pp. 161 and foll. It has been criticized, particularly by M. G. Townsend Warner (*Social England*, V, 111–12). According to him the journey was quite unnecessary, since Zonca's description of the machine was available. But it seems rather improbable that John Lombe or any other English trader of that time should have read the *Nuovo Teatro di Macchine*. Warner adds that in 1692 the possibility of introducing throwing mills into England had been discussed. (See *Calendar of Home Office Papers*, 1683–93, p. 293.) This shows only that the existence of such machines was known in England, not that their design and working had been disclosed.

England hidden in pieces of silk. When his perilous mission was finished he re-embarked and is said to have been nearly caught. A brig was sent after him, but he luckily escaped. Having returned home, he died quite young, only a few years later. Rumour said that he had fallen a victim to Italian poison.

In 1717, as soon as he was back, he set up, near Derby, silk-throwing machines, built according to the designs he had brought back from Italy.¹⁵ His brother, Thomas Lombe, supplied the necessary capital and in 1718 he obtained a patent for fourteen years.¹⁶ Soon after a factory—the first in England—was erected on an island in the Derwent.

The size of the building surprised every one. Five hundred feet long, five or six stories high, pierced by four hundred and sixty windows, it resembled a huge barracks. Once inside, astonishment became still greater. The machines were very tall, cylindrical in shape, and rotated on vertical axes. Several rows of bobbins, set on the circumference, received the threads, and by a rapid rotary movement gave them the necessary twist. At the top, the thrown silk was automatically wound on a winder, all ready to be made up into hanks for sale. The vast number of parts which made up the machines, all worked by a single wheel (the motor power for which was provided by the river Derwent), the accuracy and rapidity of the work, and the delicacy of the processes, could not but make a very vivid impression on people who had never seen anything of the kind before. The workman's chief task was to reknit the threads, whenever they broke. Each man was in charge of sixty threads.¹⁷ So here we already have a modern factory, with its automatic tools, its continuous and unlimited production, and the narrowly specialized functions of its operatives.

The development of industrial capitalism went hand-in-hand with that of machine industry. The same facts we have just noted in the stocking-frame industry appear again here, in an even more pronounced and signi-

¹⁵ With the help of an Italian called Soracole. See Defoe, *Tour*, III, 38 (1727 edition), and III, 68 (1742 edition).

¹⁶ *Chronological Index of Patents and Inventions*, No. 477. See Windham Hulme, *On the History of Patent Law in the Seventeenth and Eighteenth Centuries*, *Law Quarterly Review*, 1902, pp. 280 and foll.

¹⁷ 'Here is a curiosity of a very extraordinary nature, and the only one of the kind in England. I mean those mills on the Derwent, which work the three capital Italian engines for making organzine, or thrown silk, which, before the mills were invented, was purchased by the English merchants with ready money in Italy. . . . This engine contains 22,586 wheels and 97,746 movements, which work 73,726 yards of silk thread every time the wheel goes round, which is three times in one minute, and 318,504,960 yards in twenty-four hours. The water wheel gives the motion to all the rest of the wheels and movements, of which any one may be stopped separately.' Defoe, *Tour*, III, 67 (1742 edition). A passage from Anderson's *Chronological History and Deduction of the Origin of Commerce*, which has been repeatedly quoted, is a mere copy of Defoe's description. See also A. Young, *North of England*, I, 225, W. Hutton, *History of Derby*, p. 163, and the drawings in Zonca's book and in the French *Encyclopédie* (Supplement, XI, art. 'Soieries,' Plates 8-20). Similar machines were first used in France about the same time as in England, and were known as *Piedmontese mills*.

fificant manner. The concentration of industry became more clearly defined, the existence of the factory making it concrete and visible. Thomas Lombe's factory employed three hundred workmen. The factories for which this one became the model were often quite as large if not larger. In 1765, in the course of a parliamentary enquiry on the silk industry, several employers who appeared before the Commission were employing between four and eight hundred persons. A certain John Sherrard declared that he paid wages to as many as fifteen hundred workmen at a time.¹⁸ Some no doubt worked at home, but throwing, at any rate, was done by machines in large workshops. Nathaniel Paterson, of London, had twelve throwing mills, all under one roof¹⁹ The type of the great millowner, as distinct from that of the wealthy merchant, with whom up till then he had been still half identified, now stands out clearly. In fifteen years Thomas Lombe made a fortune of £120,000.²⁰ He became alderman and then sheriff, was knighted, and when in 1732 Parliament, at the request of the other manufacturers, refused to renew his patent, he was given £14,000 as indemnity and reward.²¹ Not only was he a rich and powerful person, but he was also regarded as a public benefactor, to whom the country acknowledged itself to be indebted.

It would therefore appear that the journey of John Lombe was the real beginning of the factory system in England. How is it, then, that this important event should have been so neglected, and that the cotton industry should, so to speak, have usurped the place of honour due by rights to the silk industry? Can this be due only to national pride, wanting to give to modern large-scale industry a purely British origin? We must not forget that by the phrase modern factory system we mean a whole economic and social world, considered not as a collection of abstract conditions, but as a living reality. We are looking, not for its theoretical origin, but for its historical beginnings. When we have to define and classify phenomena from the economic or philosophical point of view, it is enough if we only consider their characteristics. But, from the historical point of view, we must also take into consideration what we may call their volume and their weight, their actual effect on surrounding phenomena, everything which determined the material relationship of facts, so different sometimes from the logical chain of principles and consequences.

Even after the introduction of machinery and the birth of great industrial undertakings, the silk industry in England never held any but

¹⁸ *Journals of the House of Commons*, XXX, 209–20.

¹⁹ *Journals of the House of Commons*, XXX, 212–13.

²⁰ *Gentleman's Magazine*, 1739, p. 4.

²¹ 5 Geo. III, c. 8. *Journals of the House of Commons*, XXI, 782–95.

a secondary position. Several places became centres of production: London, Derby, Stockport near Manchester,²² Macclesfield, where the manufacture of thrown silk employed, in 1761, nearly two thousand five hundred workmen.²³ But in none of these centres did any industrial change take place comparable to that produced in Lancashire and Derbyshire by the invention of the cotton-spinning machines. The causes which hampered the progress of the English silk industry were the excessively high price of raw silk, specially since the King of Sardinia had forbidden its export, and the discouraging competition of the French and Italian industries, whose superiority was partly due to their natural advantages. This led to frequent crises, which were unsuccessfully dealt with by protective measures,²⁴ to repeated complaints from the employers, and rioting among the workers; and ultimately to what can be described as the stunting of the industry's growth—a great contrast to the development of the other textile industries.²⁵

Technical progress stopped at the same time. The introduction of the silk-throwing machine was the point of departure of no new invention. In the weaving and in the finishing of the material, the old processes were maintained, together with the system of small-scale production. The Spitalfields weavers, whose coalitions, strikes and riots we have mentioned before, worked at home. Their employers were merchants and contractors rather than manufacturers, and the reasons for their antagonism were only those which were, slowly and surely, transforming the old industries. John and Thomas Lombe, with their factory on the river Derwent, were precursors rather than initiators. The industrial revolution had been heralded, but had not yet begun.

II

The continuous progress of the cotton industry stands in contrast to this incomplete, or at any rate limited, development. From the cotton industry came that decisive impulse which in a few years spread to the whole textile industry, and which is all the more striking as its origins were of a more recent date. For several centuries the word cotton has formed part of the English language. But until the seventeenth century its meaning was different from that which it has nowadays. It was used

²² In 1770 there were four factories and a thousand workers in Stockport. *Journals of the House of Commons*, XXXIV, 240.

²³ *Journals of the House of Commons*, XXX, 215 and foll. The ribbon industry of Coventry has its own history.

²⁴ See 3 Geo. III, c. 21; 5 Geo. III, c. 48. These measures only half satisfied the manufacturers, who several times asked for the complete prohibition of foreign stuffs, together with heavy penalties for smuggling. *Journals of the House of Commons*, XXX, 87, 93, 725.

²⁵ See G. B. Hertz, 'The English Silk Industry in the Eighteenth Century' (*English Historical Review*, 1909, pp. 710-29)

for certain coarse woollens, made in the north of England.²⁶ For a long time the word kept that meaning, and even to-day it may perhaps still do so in certain districts of Cumberland and Westmorland²⁷ We must note that Manchester was one of the best-known districts for the manufacture of cottons.²⁸ But between the industry mentioned in Camden's *Britannia*,²⁹ and that which in our day has made Manchester's fortune, there is not much in common save the name.

Cotton goods, made in the East, and above all in India, had from time immemorial been imported into the countries on the Mediterranean, whose inhabitants, at an early date, attempted to imitate them. In northern countries, this imitation took place much later. It was only in the fourteenth century that raw cotton, brought by Venetian merchants from the Levant, made its appearance in Flanders. Antwerp was the town where the spinning and weaving of cotton were at first centred. It was an unimportant industry, quite unable to compete in any way with the woollen industry, which then flourished throughout Flanders. In 1585, after the siege and capture of Antwerp by Alexander Farnese, a certain number of workmen emigrated to England. This was, according to Schulze-Gävernitz, the origin of the English cotton industry.³⁰

The first document in which this industry is unequivocally mentioned dates from 1610. It is a petition from a certain Maurice Peeters—a Flemish-sounding name—to the Earl of Salisbury, to denounce daily fraudulent practices 'in the manufacture of bombazine cotton, such as

²⁶ 'As late as 1700 . . . cottons were still enumerated among "manufactures of wool" . . . (11 & 12 Will. III, c. 20). G. W. Daniels, *Early English Cotton Industry*, p. 7. In an Act of 1552 (5 & 6 Edw. VI, c. 6) which also mentions the 'cottons, rugges and friezes made in Lancashire,' the minimum weight of 30 lb. for a piece 22 yards long and $\frac{3}{4}$ yard broad is clearly meant for woollen fabrics. In 5 Eliz. c. 4 (1563) persons 'inhabiting within the counties of Cumberland, Westmorland, Lancaster and Wales, weaving friezes, cottons, or huswives cloth' are described as woollen cloth weavers. The Lancashire woollen industry had been prosperous since the thirteenth century (*Victoria History of the County of Lancaster*, II, 37). It might seem surprising that the word cotton in England applied to woollens, while in Spain and Italy the words *coton*, *cotone*, had long been used as they are in our own times. But A. de Candolle observes that a similar confusion lies at the very origin of the word, the Arabic words for cotton (*Kutn*) and flax (*Kattan* or *Kittan*) being practically the same (*Origine des Plantes Cultivées*, p. 325). It should be noticed not only that in Italy and Spain cotton had been spun and woven since the twelfth century, but that in Southern Germany the stuff known as 'barchent,' mentioned as early as the fourteenth century, consisted of linen warp and cotton weft. See R. Lévy, *Histoire Économique de l'Industrie Cotonnière en Alsace*, pp. 3, 4, 7, and G. W. Daniels, *Early English Cotton Manufacture*, p. 14. The latter writes: 'It is hard to resist a suspicion that the vegetable fibre may have been used in the manufacture of Lancashire cloths.' *Ibid.*, p. 7

²⁷ See *A Complete History of the Cotton Trade* (1823), p. 40, A. Ure, *The Cotton Manufacture of Great Britain* (1836), I, 31. 'A species of coarse cloth, called Kendal cottons.' Eden, *State of the Poor*, II, 751.

²⁸ 'The towne at that age (sixteenth century) was of great account for certain woollen clothes there wrought, and in great request, commonly called Manchester cottons.' R. Hollinsworth, *Mancunensis*, p. 64—a book written in the middle of the seventeenth century, and published by W. Willis in 1839.

²⁹ 'Hoc circumvicinis oppidis suo ornato, frequentia, lanificio, foro, templo, collegio a Grislaesi et La Waris, ut ex insignibus deprehendi, constructo longe praecellens. Superiori vero aetate multo praecellentius tum laneorum pannorum honore (quos *Manchester cottons* vocant) tum asyli jure, quod Parliamentaria auctoritas sub Henrico VIII Cestriam transtulit.' William Camden, *Britannia Descriptio* (1586), p. 429.

³⁰ Schulze-Gävernitz, *La grande industrie* (French translation), p. 27.

groweth in the land of Persia, being no kind of wool.'³¹ Thirty years later we find that industry established in Manchester, as is witnessed by Lewis Roberts, 'merchant and captain of the City of London.' He mentions Manchester's commercial relations with Ireland: 'Neither doth the industry rest there, for they buy cotton wooll in London, that comes first from Cyprus, and Smyrna, and at home worke the same, and perfitt it into fustians, vermilions, dimities and other such stuffes, and then returne it to London, where the same is vented and sold, and not seldom sent into forrain parts, who have means, at far easier termes, to provide themselves of the said first materials.'³² It can be therefore said that early in the seventeenth century Lancashire, and Manchester in particular, were in possession of their famous speciality.

During this early period of the cotton industry in England, the quality of the product was rather poor, and its quantity insignificant. Almost all the cotton stuffs sold in London and in the chief towns came, more or less directly, from India. Though it is rather difficult to define, there was a very close connection between this old-established import on the one hand, and this new-born product on the other. We have seen that the development of the colonial, and especially of the Indian, trade was one of the main characteristics of the great economic movement which took shape towards the end of the seventeenth century. One of the chief products sold to the British public, and for which the demand grew ever greater, was cotton material, flowered fabrics, either painted or printed. Fashion took it up, and soon these stuffs were all the rage: 'We saw our persons of quality dressed in Indian Carpets, which, but a few years before, their chambermaids would have thought too ordinary for them; the chintzes were advanced from lying on their floors to their backs, from the foot cloth to the petticoat, and even the Queen herself³³ at that time was pleased to appear in China and Japan. I mean China silks and calicoes. Nor was this all, but it crept into our houses, our closets and bedchambers; curtains, cushions, chairs, and, at last, beds themselves were nothing but calicoes or Indian stuffs.'³⁴

At the same time there arose on all sides a tempest of recriminations and complaints. What was going to become of the staple trade of the Kingdom, the privileged woollen industry, if this foreign competition

³¹ *State Papers, Dom.*, LIX, 5. W H Price, *On the Beginning of the Cotton Industry in England* (*Quarterly Journal of Economics*, XX, 608-13), quotes a petition of 1620, kept in the London Guildhall Library (*Petitions and Parliamentary Matters*, 1620-21, No 16), according to which the cotton industry in England dated either from the very beginning of the seventeenth century or the last years of the sixteenth. 'About twenty years ago divers people in this Kingdom, but chiefly in the County of Lancaster, have found out the trade of making of the fustians, made of a sort of bombast or down, being a fruit of the earth growing upon little shrubs or bushes, brought into this Kingdom by the Turkey merchants from Smyrna, Cyprus, Acra and Sydon, but commonly called cotton-wool. . . . There is at least 40,000 pieces of fustian made in England . . . and thousands of poor people set on working of these fustians.'

³² Lewis Roberts, *The Treasure of Traffic*, p. 32 (London, 1641).

³³ Queen Mary, wife of William of Orange.

³⁴ Defoe, *Weekly Review*, January, 1708.

was allowed? We know that the woollen industry was not used to submitting patiently to any competition whatsoever. Parliament hastened to its aid. In 1700 an Act was passed, forbidding absolutely the import of printed fabrics from India, Persia and China. All goods seized in contravention of this edict were to be confiscated, sold by auction and re-exported.³⁵

This drastic step cannot have produced the results expected of it, for very soon complaints were renewed.³⁶ About 1719 they became very pressing, and again Parliament was besieged with petitions.³⁷ Many pamphlets were published, in which the manufacturers of woollen goods inveighed against the fashion of printed cottons.³⁸ And they did not stop at words. Trouble broke out in several places. The weavers, exasperated by continued unemployment, began to attack in the streets people dressed in cotton material, tearing and burning their clothes. Houses were even broken into and sacked.³⁹ This agitation was only brought to an end after a new Act of prohibition had been passed, even more explicit and far-reaching than the first. 'Whereas it is most evident that the weaving and using of printed, painted, stained and dyed calicoes in apparel, household stuff, furniture and otherwise, does manifestly tend to the great detriment of the woollen and silk manufactures of this Kingdom, and to the excessive increase of the poor, and, if not effectually prevented, may be the utter ruin and destruction of the said manufactures, and of many thousands of Your Majesty's subjects and their families, whose livelihood does entirely depend thereon,' all persons resident in England were forbidden to sell or to buy these fabrics, or to wear them or to have them in their possession, under penalty of a £5 fine for private persons and £20 for merchants.⁴⁰ Such facts could not help affecting the development of the cotton industry in England. When the import of Indian materials was quite unrestricted, the demand they created already held out the promise of success and fortune to whosoever was capable of imitating

³⁵ 11 & 12 Will III, c. 10. Bales of merchandise for the export trade were temporarily allowed into British ports, but only if they were declared at the customs and put into a bonded warehouse. See Bal Krishna, *Commercial Relations between India and England from 1601 to 1757*, pp. 194 *sqq.*, and C. J. Hamilton, *Trade Relations between England and India (1660-1896)*.

³⁶ A pamphlet of 1706 deplores 'the wearing of printed or stained calicos, brought from India.' J. Haynes, *A View of the present State of the Clothing Trade in England*, p. 19.

³⁷ Very curiously one of these petitions is in opposition to all the others. For it pleads the case for cotton fabrics, in the interest of the cloth trade, showing that a fall in the price of English woollen goods must be followed by an increase in the quantity exported. *Journals of the House of Commons*, XIX, 254.

³⁸ *The just Complaints of the poor Weaver truly represented* (1719); *A brief State of the Question between printed and painted Calicos and Silk Manufacturers* (1719); *The Weaver's true Case* (1720); *The further Case of the Woollen and Silk Manufacturers* (1720). And for the opposite case: *Asgill, Brief Answer to a brief State of the Question, etc.* (1719); *The Weaver's Pretences examined* (1719). We are indebted to Prof. Foxwell for our knowledge of most of these pamphlets.

³⁹ See *The Weaver's true Case*, p. 40; *The Weaver's Pretences examined*, p. 16.

⁴⁰ 7 Geo. I, st. I, c. 7.

them⁴¹ After the prohibition of 1700 these chances were greatly increased. The public, deprived of a favourite article, or at any rate forced to secure it through unlawful channels, welcomed the still clumsy attempts of English weavers.

Lancashire, where the seeds of this industry had already begun to germinate, offered a most favourable ground for its development. During the preceding century, raw cotton had been brought from Smyrna to London, and from London to Manchester. But Liverpool was growing, and received cotton direct from the East and West Indies.⁴² For the East no longer had the monopoly of cotton growing. It flourished in the Antilles and in Brazil.⁴³ Moreover, whilst India and China only exported their surplus crop, practically the whole of the American crop was sent to European ports. In this way a double stream of imports converged on Liverpool.—But that would not have been enough to determine the growth of the cotton industry in Lancashire. Cotton spinning demands special climatic conditions—a fairly damp atmosphere and no great difference between the maximum and minimum temperatures. These conditions exist in Lancashire. In Bolton, the average summer temperature is about 60° Fahrenheit, and the average in winter 40°. The average hygrometric condition is 0.82, that of the wettest month 0.93, and that of the driest month 0.78.⁴⁴ The high hills on the east and north of Manchester, towards Ashton and Rochdale, stop the clouds from the sea, their steep slopes receiving most of the rain, which, for the whole county, reaches an annual average of about 40 inches. It has been observed that factories

⁴¹ Rights of patent were granted in 1691 by one John Barkstead for 'the making of callicoes, muslins and other fine cloathes of the sort out of the cotton wool of the growth and product of their Majesties plantations in the West Indies.' See *Chronological Index of Patents*, No. 276 (Sept. 22nd, 1691).

⁴² It was only in the second part of the eighteenth century that Liverpool left London behind as the great cotton market (Th. Ellison, *The Cotton Trade of Great Britain*, pp. 170–71). But, early in the century, much cotton was already imported by Liverpool merchants, and also through the smaller ports of Whitehaven and Lancaster. *Journals of the House of Commons*, XXII, 566–67, quoted by G. W. Daniels, *The early English Cotton Industry*, pp. 57–58. See also St Dumbell, *Early Liverpool Cotton Imports and the Organization of the Cotton Market in the Eighteenth Century*, *Economic Journal*, XXXIII, 363 and foll. By 1752, 106 ships, out of the 220 owned at Liverpool, were engaged in the West Indian and American trade.

⁴³ The North American colonies only took up cotton growing later on. The cotton imports from Charleston or New York mentioned from time to time after 1747 were probably imports of West Indian cottons in ships which had put in at some North American ports. See Th. Ellison, *Cotton Trade of Great Britain*, p. 81, and E. von Halle, *Baumwollproduktion und Pflanzenwirtschaft in den Nordamerikanischen Südstaaten* (*Staats- und Sozialwissenschaftliche Forschungen*, 15, I, p. 9). This accounts for the surprise shown by the Customs Officers who, in 1784, were present at the unloading in Liverpool of eight bales of cotton brought in an American ship, and declared to originate from the United States. They refused to accept this declaration, and seized the bales, under the Navigation Act, for cotton from the West Indies, as they believed it to be, was not allowed to be imported under a foreign flag—and this happened a year after the Treaty of Versailles had finally severed the North American colonies from the mother country (Bishop, *History of American Manufactures*, I, 354, Th. Ellison, *op. cit.*, p. 82). Mention is made of the fact in a contemporary French document ('*Considérations sur les Manufactures de Mousseline et de Callico dans la Grande Bretagne*', *Archives des Affaires Etrangères, Angleterre, Mémoires et Documents*, LXXIV, fol. 182).

⁴⁴ Sir Benjamin Dobson, *Humidity in Cotton Spinning*, pp. 17–22. The plates (pp. 44, 45, 59, 67, 73) show that the cohesion and evenness of the cotton thread varies with the moisture of the atmosphere.

tend more and more to establish themselves in this wet area, where the constant moisture of the atmosphere makes it possible to spin exceptionally fine counts.⁴⁵

The only things the Lancashire spinners, both male and female, lacked, were the supple fingers and the extraordinary skill of the Indian workmen. The counts they spun, with implements as a matter of fact scarcely better than those used in India,⁴⁶ were either too coarse or too weak. The custom therefore grew up of making materials of mixed linen and cotton. The linen thread, being stronger, formed the warp, and the cotton the woof.⁴⁷ These were the materials which, at the beginning, laid the foundations of Manchester's reputation. Printed by hand with engraved plates, they were able, if not to rival those of India, yet to serve as more or less acceptable substitutes, so that public taste could be satisfied, in spite of prohibitive legislation.

This was exactly what the woollen-cloth merchants had feared. Their campaign of 1715–20 seemed to be directed only against foreign goods, in the name of the British staple industry. As a matter of fact, it was really a question of suppressing a competition which was becoming the more dangerous for having been set up in England itself. The selfishness of organized trade interests in our times is probably quite as pitiless as it was then, but it is no longer so artlessly expressed. No one to-day would write, denouncing as a crime the attempt to establish a new industry in the country: 'As if the Nation was never to want a set of men to undo her, no sooner were the East Indian chintz and printed calicoes prohibited from abroad, but some of Britain's unnatural children set all their arts to work, to evade the law of prohibition, to employ people to mimick the more ingenious Indian, and to legitimate the grievance by making it a manufacture.'⁴⁸ When people lamented the fate of those thousands who were going to be deprived of work and bread, some unprejudiced persons could not help remarking that, on the other hand, many were about to obtain work in the new workshops which were being opened.⁴⁹ To this it was answered, that the number of work-

⁴⁵ Schultze-Gieveritz, *La Grande Industrie*, pp. 58 and 108. Mr. Chapman seems to under-value the effect of natural causes when he writes. 'Indeed, the cotton industry settled in Lancashire for no particular reason, except perhaps that the woollen trade was already there, that foreigners were kindly received, and that Manchester was not a corporation.' He nevertheless admits that 'as soon as the value of the physical features in certain parts of Lancashire began to be realized, the manufactures in other districts tended to be drawn with increasing force to the main seat of the industry.' S. Chapman, *The Lancashire Cotton Industry*, p. 154.

⁴⁶ A few improvements had been adopted from the woollen industry, for example the spinning wheel and metal cards.

⁴⁷ See the preamble to 9 Geo. II, c. 4: 'Whereas great quantities of stuffs made of linen yarn and cotton wool have for several years past been manufactured and have been printed and painted within this Kingdom of Great Britain. . . .'

⁴⁸ *The just Complaints of the poor Weaver truly represented*, p. 14.

⁴⁹ Asgill, *Brief Answer to a brief State of the Question between printed Calicoes and the Woollen and Silk Manufactures; The Weaver's Pretences examined; Reasons humbly offered to the House of Commons by the Calico Printers*.

men employed in the cotton industry was very small.⁵⁰ But if this industry was so insignificant, how could its competition be represented as a formidable menace to the ancient and powerful woollen trade?

Thus nothing was neglected to kill the cotton industry at its birth. But it survived. The use of painted and printed calico alone was forbidden. The manufacture of the material was uninterrupted. With regard to the printing, we have every reason to believe that it was soon tolerated, for rarely does law triumph over fashion. As early as 1735, manufacturers got Parliament to pass an Act formally exempting from the prohibition of 1721 all stuffs made of mixed linen and cotton, on the ground that it was 'a branch of the ancient fustian manufacture.'⁵¹ Prohibition was maintained against pure cotton fabrics both painted and printed. It only came to an end in 1774,⁵² on the request of Richard Arkwright.

This story of the beginnings of the cotton industry is interesting in several ways. It is a clear example of the influence of commercial on industrial development. The new industry was the child of the East Indian trade. Its creation followed the import of a foreign product, and the place and conditions of its establishment were partly determined by the fact that the raw material was imported from abroad. A no less interesting feature is the part played by the ancient textile industry. It was that very industry which, by its blind passion for monopoly, stirred up that competition which it tried to kill a few years later. for it is from the prohibition of 1700 that the success of English-made cotton goods, as a substitute for Indian fabrics, can be said to date. Finally, from that time onwards, the contrast between the two industries is very clear and enables us to understand the rapid evolution of the one, and the more difficult and slower development of the other. A new industry, without traditions, had, instead of privileges, all the advantages of freedom. The fact that it was not fettered by tradition and stood outside the regulations which stopped, or at any rate hampered, technical development, made it, so to speak, a field for inventions and for every kind of initiative. Thus a favourable ground was prepared for the building up of machine industry.

III

In the organization of the work, as well as in its implements, the cotton industry began by being in every respect like the woollen industry. It was a cottage industry. The Lancashire weaver worked in the country, in his own house standing on its own plot of ground.⁵³ The

⁵⁰ *The just Complaints of the poor Weaver*, p. 25.

⁵¹ 9 Geo. II, c. 4. See short history of the Acts of 1721 and 1735 in G. W. Daniels, *Early English Cotton Manufacture*, pp. 20 and foll.

⁵² 14 Geo. III, c. 72.

⁵³ E. Butterworth, *History of Oldham*, pp. 105-7.

women and children carded and span.⁵⁴ Nowhere was a close alliance between agriculture and industry more necessary. The wet and misty climate, with the stretches of moors and marshes, forced the country people to find other means of livelihood besides work on the land.

Along with the usual features of the domestic system, we find here again traces of that natural evolution which gradually brought in the capitalist element. Towards 1740 and 1750, a class of men made their appearance in Lancashire, who in every way resembled the merchant manufacturers of the South-west; they were called fustian masters. They bought the raw material, linen thread and raw cotton, and gave them out to the weavers. The weavers undertook the preparatory processes of carding, roving and spinning, and they thus became sub-contractors as well as workmen. Often indeed we find below them a second class of middlemen, the spinners, who, being paid by the weavers, had in their turn to pay the carders and rovers.⁵⁵ Once woven, the material was handed over to the fustian master, who sold it again to the actual merchants.⁵⁶ Thus the division of labour was fairly advanced. Moreover, while spinning was still given out in the villages, there was a tendency for weaving to concentrate in certain localities, the most important being Manchester.

Thus constituted, the industry made sufficient progress to justify, if not the jealousy and alarm of which it nearly became the victim, at any rate a good opinion of its vitality and its future.⁵⁷ Manchester, about the middle of the eighteenth century, is said to have sent cotton goods to Italy, Germany, the North American Colonies, to Africa, Asia Minor, and even to China, through Russia.⁵⁸ But, according to the Customs Registers,⁵⁹ the total value of the cotton goods exported from England did not exceed £46,000; and when, on the occasion of George III's

⁵⁴ At Mellor, in 1770, 'out of fifty or sixty farmers, there were only six or seven who raised their rents only from the produce of their farms: all the rest got their rent partly in some branch of trade, such as spinning and weaving wool, linen, or cotton.' As for the cottagers, they were spinners or weavers in winter and worked in the fields in summer. W Radcliffe, *Origin of the new System of Manufacture*, commonly called Power Loom Weaving, 9 and 59-60. 'Farms were mostly cultivated for the production of milk, butter and cheese.... And, when that was finished, they busied themselves in carding, slubbing and spinning wool or cotton, as well as in forming it into warps for the loom.' S. Bamford, *Dialect of South Lancashire*, pp. iv and v. For a picturesque description of the domestic system of manufacture in the cotton industry see Louis W. Moffit, *England on the Eve of the Industrial Revolution*, p. 210

⁵⁵ R Guest, *Compendious History of the Cotton Manufacture*, p. 10, E. Butterworth, *History of Oldham*, p. 103. Butterworth seems, in some of the facts he quotes, to have borrowed from Guest.

⁵⁶ As in the woollen industry, dyeing and finishing were done at the expense of the merchant R Guest, *op. cit.*, p. 11 G. W Daniels observes that early in the seventeenth century Humphrey Chetham was playing in Manchester the part of master manufacturer (*Early English Cotton Manufacture*, pp. 35-6)

⁵⁷ See *The late Improvements in Trade, Navigation and Manufactures considered* (1739) in J. Smith, *Memoirs of Wool*, II, 89. See also document of 1751 quoted by Daniels, pp. 25-26, in which it is said of Manchester that 'there is not any town in the nation, excepting our sea ports, that may be compared with it in trade, as appears from the number of packs of goods which go weekly out of the town, which amount by a modest computation to 500.'

⁵⁸ W. Radcliffe, *Origin of Power Loom Weaving*, pp. 12 and 131-33.

⁵⁹ Quoted by E. Baines, *History of the Cotton Manufacture*, p. 215.

Coronation in 1760, Manchester had a great procession of trades 'with suitable dresses and colours'⁶⁰ the cotton spinners and weavers were not represented. The cotton manufacture was still small and weak, in comparison with the great woollen industry; but the series of inventions which were to cause its rapid transformation, followed by that of all other textile industries, had already begun.

A mistake we should guard against is the common one of always and everywhere regarding technical inventions as the outcome of scientific discoveries. Of course we do not for a moment deny the decisive influence of science on technical progress.⁶¹ But a closer examination of the subject shows that this progress (prior to the triumph of technique in the nineteenth century) may be divided into two distinct phases. Only in the second of these does science make its appearance. The first is all empiricism and tentative endeavour, and is sufficiently accounted for by economic needs and the spontaneous efforts they call forth. Every technical question is first and foremost a practical question. Before ever it becomes a problem to be solved by men with theoretic knowledge, it forces itself upon the men in the trade as a difficulty to be overcome, or a material advantage to be gained. There is, as it were, an instinctive effort, which not only precedes, but is a necessary condition to, the appearance of conscious effort. 'It is well known,' said Serjeant Adair when pleading for Richard Arkwright in 1785, 'that the most useful discoveries that have been made in every branch of art and manufactures have not been made by speculative philosophers in their closets, but by ingenious mechanics, conversant in the practices in use in their time, and practically acquainted with the subject-matter of their discoveries.'⁶²

An idea which flashes suddenly into the mind of a genius, and whose application produces, no less suddenly, an economic revolution, is what we might describe as the romantic theory of invention.⁶³ Nowhere do we find evidence of such *a nihilo* creations, bursting forth like miracles, which only the mysterious power of individual inspiration could explain. The history of inventions is not only that of inventors, but that of

⁶⁰ *The New Manchester Guide* (1804), p. 43.

⁶¹ What follows is by no means in contradiction with the generally accepted idea (so clearly laid down in Sombart's *Moderne Kapitalismus*, II, 60) that the capital economic event of the eighteenth century was the transformation of industrial technique under the influence of science. But that very event had been made possible by an earlier series of inventions of a purely empirical origin. It must be recognized, at the same time, that the interest shown by the enlightened public in the technique of trades (a characteristic feature of the century) helped in finding means to encourage mechanical invention. The foundation of the Society of Arts in England (1754) took place at the same time as the publication of Diderot's monumental descriptions of trades in the French *Encyclopédia*. On the multiplication of such societies and their activities, see W. Bowden, *Industrial Society in England towards the End of the Eighteenth Century*, pp. 10–12, 38 and foll. Compare with H. Sée, *Les Origines de l'Industrie Capitaliste en France*, *Revue Historique*, CLXVIII (1923), pp. 188 and foll.

⁶² R. Arkwright versus Peter Nightingale, pp. 1–2.

⁶³ J. A. Hobson uses the expression 'heroic theory,' *Evolution of Modern Capitalism*, p. 57. See L. Brentano, *Ueber die Ursachen der heutigen sozialen Not*, p. 30.

collective experience, which gradually solves the problems set by collective needs.

The first of the inventions by which the textile industries were transformed, and that which must be considered as the origin of all the others, was a simple improvement in the old weaving loom: the invention of the fly shuttle by John Kay, in 1733. Born in 1704, near Bury in Lancashire, John Kay first worked for a Colchester clothier. About 1730, we find him making combs for the looms.⁶⁴ He was therefore half weaver and half mechanic, and was accustomed to using the implement which he later on tried to improve. In that same year 1730, he produced his first invention, a new process 'for carding and roving mohair and worsted'.⁶⁵ To him also is attributed the introduction of steel combs, instead of those made of wood or horn, with which the early looms were fitted.⁶⁶

The invention of the fly shuttle was demanded by a practical difficulty which manufacturers daily experienced. It was impossible to obtain material of more than a certain width without employing two or more workmen. The width of the material which a single workman could make by throwing the shuttle from one hand to the other was obviously limited by the length of his arms. Kay arranged for the shuttle to be automatically thrown from one side of the loom to the other.⁶⁷ For this purpose he fitted the shuttle with small wheels and set it in a kind of wooden groove, fixed so that it did not interfere with the alternating rise and fall of the warp. On either side, in order to give it a to-and-fro motion, he put two wooden hammers hung on horizontal rods. The two hammers were bound together by two strings attached to a single handle, so that with one hand the shuttle could be driven either way. The arrangement worked in the following manner: with a sharp tap, the weaver caused first one and then the other hammer to move on its rod. It hit the shuttle, which slid along its groove. At the end of each rod there was a spring to stop the hammer and replace it in position.⁶⁸

Not only did the fly shuttle enable broader material to be woven, but weaving could also be done much more quickly than formerly. John Kay could not avoid the complaint urged against all inventors, for the

⁶⁴ Bennett Woodcroft, *Brief Biographies of Inventors*, p 2

⁶⁵ *Abridgments of Specifications relating to Weaving*, I, 3 (Patent No 515).

⁶⁶ R. W. Cooke-Taylor, *Introduction to the History of the Factory System*, p 405.

⁶⁷ The Dutch loom, which had been in use for a century, not only was a clumsy contrivance, the shuttle being moved by a system of cog wheels, but could be used only for weaving ribbons

⁶⁸ See the specification attached to the patent and dated May 26th, 1733

'A new invented shuttle, for the better and more exact weaving of broad cloths, broad bays, sail cloths, or any other broad goods . . . which shuttle is much lighter than the former, and by running on four wheels moves over the lower side of the web and spring, on a board about nine feet long put under the same and fastened to the layer; and which new contrived shuttle, by the two wooden tenders, invented for that purpose and hung to the layer, and a small cord commanded by the hand of the weaver, the weaver, sitting in the middle of the loom, with great ease and expedition by a small pull at the cord casts or moves the said new invented shuttle from side to side to pleasure.' *Abridgments of Specifications relating to Weaving*, I, No 542. See the plates in the French *Encyclopédie*, I, Vol. III of the supplement, article 'Draperie'.

Colchester weavers accused him of trying to deprive them of their daily bread. In 1738, he tried his fortune in Leeds. There he met with no less fierce hostility from the manufacturers, who were quite ready to use his shuttle, but refused to pay the royalties he claimed. There were endless law suits, the manufacturers formed 'the Shuttle Club' to meet the costs, and Kay was ruined by legal expenses⁶⁹ In 1745 he left Leeds and returned to Bury, his native place. His opponents' hostility pursued him there, and in 1753 there was even a riot, the mob breaking in and sacking his house. The wretched inventor fled, first to Manchester, which he left, it was said, hidden in a sack of wool,⁷⁰ and then to France. In spite of opposition, which still went on for many years, the use of the fly shuttle soon became general, and by 1760 its influence began to be felt in all branches of the textile industry.⁷¹

This invention had incalculable consequences. The various processes in an industry form one whole, and are comparable to a system of inter-dependent movements all responding to the same rhythm. The effect of a technical improvement accelerating only one of these operations is to break the common rhythm, upsetting, as it were, the balance of the system. So long as the various operations remain uneven, and do not succeed in regaining their equilibrium, the whole industry remains unstable and subject to oscillations. These slowly become more regular and at length give rise to a fresh rhythm of production.⁷² In the textile industry the two chief processes are spinning and weaving. Normally they must work at the same pace. The amount of thread spun in any given time should correspond to the amount of material which can be woven in the same time. The looms must not stand idle for lack of thread, nor the spinning mills run the risk of stoppage because they have spun too quickly.

In the old textile industry the balance was hard to maintain. We know that a single loom provided work for five or six spinning wheels. In spite of imports there was normally an almost constant shortage of thread.⁷³ As soon as the fly shuttle enabled the weaver to work much faster this shortage became still greater. Not only did the price of thread go up, but it was often impossible to obtain the necessary quantity

⁶⁹ A. Barlow, *Principles and History of Weaving*, p. 96, B. Woodcroft, *Brief Biographies of Inventors*, p. 3; *Cotton-Spinning Machines and their Inventors*, *Quarterly Review*, CVII, 49.

⁷⁰ B. Woodcroft, *op. cit.*, pp. 4-5, *A Complete History of the Cotton Trade*, p. 302.

⁷¹ In London in 1767 there was a violent conflict between the 'narrow weavers' and the 'engine weavers.' See *Annual Register*, 1767, p. 152. In some districts the fly shuttle was only introduced much later. In Wiltshire and Somerset it hardly made its appearance before the nineteenth century. See *Journals of the House of Commons*, LVIII, 885 J. L. and B. Hammond (*The Skilled Labourer*, p. 159) mention disturbances caused in Frome as late as 1822 by the introduction of 'spring looms'. The invention in 1760 of the drop box, by Robert Kay (son of John Kay) completed that of the fly shuttle and contributed to its final success.

⁷² This process is very well described and analysed in J. A. Hobson's *Evolution of Modern Capitalism*, p. 59.

⁷³ Specially in summer when work in the fields occupied the whole rural population. See the testimony of Henry Hall, President of the Worsted Committee, quoted by James, *History of the Worsted Manufacture*, p. 312.

within a limited time. From this there often resulted delays in the delivery of material, much to the detriment of the manufacturers.⁷⁴ Weavers, who had to pay the spinners, found it hard to make a living. This state of affairs could not last, and a new balance had to be found. Some means had to be devised of spinning yarn quickly enough to keep pace with the weavers. As this necessity became more and more pressing, research became more and more active, until a practical solution was finally discovered.

IV

The cotton industry was specially well adapted as a field for experiments. With regard to the problem of mechanical spinning it afforded especially favourable conditions for inventors. For cotton fibre, being more cohesive and less elastic than wool, is easier to twist and stretch into a continuous thread.

• The origin of the spinning machine is still wrapped in some obscurity. Two men, John Wyatt and Lewis Paul, had a hand in it, and it is difficult to determine what part each of them played.⁷⁵ Lewis Paul appears as the more important person. He took out in 1738 the original patent, in which Wyatt's name is not even mentioned.⁷⁶ He it was whom his contemporaries regarded as the inventor. Nevertheless it is probable that Paul did much less, and Wyatt much more than might be supposed, judging by appearances.

John Wyatt was born in 1700 in a village near Lichfield. He at first became a ship's carpenter.⁷⁷ But he was a born inventor, with that special temperament whose manifestations are so closely allied to instinct. He kept inventing all his life, and the variety of his successive schemes was no less astonishing than their number: harpoons shot from a gun, improved weighing machines, machines to mend and level roads. His notes, which are preserved in the Birmingham Central Free Library, are full of specifications and drawings.⁷⁸ His first invention seems to have been a machine for turning and boring metals, which was purchased by

⁷⁴ Similar facts took place in Germany for the same reasons and nearly at the same time as in England. See J. Külischerk *Die Ursachen des Uebergangs von der Handarbeit zur maschinellen Betriebsweise um die Wende des 18th und in der ersten Hälfte des 19th Jahrhunderts, Jahrbuch für Gesetzgebung*, XXX, pp. 38–40 (1906).

⁷⁵ Chas. Wyatt (*On the Origin of Cotton Spinning by Machinery*, Repertory of the Arts, Manufactures and Agriculture, Series II, Vol. XXXII, 1818) claims for his father the honour of the invention. Rob. Cole (*Some Account of Lewis Paul*, published as an appendix to French's *Life of Crompton*) maintains on the other hand that Lewis Paul was the real inventor. According to E. Baines' *History of the Cotton Manufacture*, pp. 119 and foll.) the machine was invented by Wyatt and improved by Lewis Paul. B. F. Dobson is the latest supporter of Lewis Paul's claims (*The Story of the Evolution of the Spinning Machine*, pp. 51–52). But he produces no new evidence disproving that of the manuscripts kept in the Birmingham Central Free Library, which are quoted below.

⁷⁶ *Abridgments of Specifications relating to Weaving*, I, No. 562. Letter from W. James to the bookseller Warren, July 17th, 1740: 'Yesterday we went to see Mr. Paul's machine, which gave us all entire satisfaction both in regard to the carding and the spinning.' R. Cole, *Some Account of Lewis Paul*, p. 256.

⁷⁷ John Wyatt, Master Carpenter and Inventor, pp. 1–4.

⁷⁸ Wyatt MSS. I, 1, 8, 21, and II, 16, 25, 30, 32.

a Birmingham armourer called Richard Heeley.⁷⁹ This man got into financial difficulties, and, finding himself, apparently, unable to fulfil his engagements, he finally made over his rights to a third party. This new owner was Lewis Paul, who thus came into touch with Wyatt. The contract by which these two men bound themselves to exploit the invention abandoned by Heeley is dated September 19th, 1732⁸⁰

Lewis Paul, the son of a French refugee and the protégé of the Duke of Shaftesbury, was intelligent and pushing; he had the manners of a gentleman, and pretensions somewhat above his station. He was acquainted with some rich or notable persons, as for instance Cave, the editor of the *Gentleman's Magazine*, and Dr. Johnson.⁸¹ Wyatt no doubt hoped to make something out of him, and perhaps Paul made him believe he had money.⁸² In any case they joined forces, and their association lasted over ten years.

At the time John Wyatt met Lewis Paul he had, if we may believe his son Charles Wyatt, already conceived the idea of a spinning machine. He produced it in the following year (1733): 'In the year 1730, or thereabouts, living then in a village near Lichfield, our respected father first conceived the project and prepared to carry it into effect, and in the year 1733, by a model about two feet square, in a small building near Sutton Coldfield, without a single witness to the performance, was spun the first thread of cotton ever spun without the intervention of human fingers,⁸³ he, the inventor, to use his own words, being all the time in a pleasing but trembling suspense.⁸⁴ Several references in John Wyatt's original papers agree with this account. In some of his letters he alludes to a new invention of which he expects great things: 'I think,' he wrote to his brother, 'I have a gymcruk of some importance,' and he talks of moving to Birmingham.⁸⁵ Then follow two rather puzzling documents dated August 12th and 14th, 1733, laying down the conditions by which Lewis Paul became the sole owner of 'a certain engine, machine or in-

⁷⁹ Wyatt MSS I, 4

⁸⁰ 'Articles of agreement indented, had, made, concluded and fully agreed upon the 19th day of September, in the sixth year of the reign of our Sovereign Lord George the Second, by grace of God, etc., and in the year of our Lord 1732, between Lewis Paul gentleman, of the parish of St Andrews, Holborn, in the county of Middlesex, of the one part, and John Wyatt of the parish of Weeford and county of Stafford, carpenter.' Paul promised Wyatt £500, payable on the production of the invention. Wyatt MSS I, 2.

⁸¹ See the letters published in the *Birmingham Weekly Post*, Nos. of Aug 22nd, 29th, and Dec. 29th, 1891.

⁸² Wyatt did not always have complete faith in him. See letters to his brother of Sept. 25th and Oct. 28th, 1733. Wyatt MSS I, 8 and 10.

⁸³ Was it really the first? The catalogue of patents mentions two similar inventions, one made in 1678 by Richard Dereham and Richard Haines (No. 202), the other in 1723 by Thomas Thwaites and Francis Clifton (No. 459). In any case these inventions were followed by no practical consequences.

⁸⁴ Chas Wyatt, *op. cit.*, p. 80.

⁸⁵ Wyatt MSS I, 9. The letter is undated, but it obviously precedes other letters of 1733 where the same word recurs as a familiar term. Later it becomes transformed into a kind of conventional figure 25 Gymcruk or—25 *Ibid.* I, 13

strument for certain purposes.⁸⁶ This designedly obscure description, together with the importance of the sum promised to Wyatt in exchange for the rights over this mysterious machine,⁸⁷ leads us to believe that a secret of great value was involved, although the invention was still incomplete and could give no immediate returns.

Several years went by before it was in a condition to be used practically. The correspondence of the two associates betrays their disappointment. In 1736 their mutual recriminations nearly brought about a rupture. Wyatt complained of the destitution Paul's promises had left him in. He complained of 'being much poorer than a pauper. . . . It becomes a question to me whether I am not much more to be blamed for an adventurous credulity than for any crime I have been guilty of with respect of you.' Lewis Paul reminded him that he was at his mercy: 'I know your grand secret and can use you as I please.'⁸⁸ Moreover, he had no money, and in 1737, he was only just able to help Wyatt, who was starving. He seems to have despaired of carrying through the scheme he had undertaken: 'I suppose you are still entertained with dreams about the bridge to our mutual ruin. . . . It was a monstrous imprudence in you to hazard all for an undertaking you could in reason have but slight or any hopes of.'⁸⁹ In the following year, the machine having no doubt had the necessary improvements made to it, they plucked up courage. The patent was taken out and registered on June 24th, 1738.

This patent is of capital importance in the history of industrial technique. The text is clear enough to give a fairly definite idea of Wyatt's machine, the original models having since disappeared: 'The said machine, engine or invention, will spin wool or cotton into thread, yarn or worsted; which, before it is placed therein, must be first prepared in manner following, to wit, all those sorts of wool or cotton which it is necessary to card, must have each cardful, butt or roll, joined together so as to make the mass become a kind of a rope or thread of raw wool. . . . One end of the mass, rope or thread or sliver is put betwixt a pair of rollers, cylinders, or cones,⁹⁰ or some such movements, which, being twined round by their motion, draws in the raw mass of wool or cotton to be spun, in proportion to the velocity given to such rollers, cylinders, or cones, as the prepared mass passes regularly through or betwixt these rollers, cylinders or cones, others, moving proportionally faster than the first, draw the rope thread or sliver into any degree of fineness which may

⁸⁶ Wyatt MSS., I, 1 and 5.

⁸⁷ He was to receive £2,500. If he died within four years his heirs were to receive £450 and his wife a pension of £100. *Id.*, *ibid*.

⁸⁸ Wyatt MSS., I, 23-8 (Letter from Paul to Wyatt undated, p. 24; letters from Wyatt to Paul, April 21st and Sept 21st, 1736, pp. 25 and foll.).

⁸⁹ Wyatt MSS., II, 69, 71-5 and I, 35-7.

⁹⁰ The surface of one of these cylinders was smooth, the other was 'made very rough, indented, or covered with leather, cloth, shagg, or sometimes with hair or brushes or with points of metal.' Wyatt MSS., I, 45-8. This was what made them adhere together.

be required.⁹¹ This is the essential contrivance which will also be found in the machine said to be Arkwright's. It is easy enough to understand how the thread, passing between rollers which revolved more and more quickly, stretched and became finer and finer. It is harder to understand how it acquired the necessary twist. On this point the text of the patent is rather obscure; there probably lay the weak point of the invention.⁹²

Once spun, the thread was wound off on spindles or pins, whose rotation was regulated by that of the fastest turning roller. If required these spindles could be put to another purpose: 'In some cases only the first pair of rollers, cylinders, or cones, are used, and then the bobbin, spole, or quill, upon which the thread, yarn, or worsted is spun, is so contrived as to draw faster than the first rollers, cylinders, or cones give, and in such proportion as the first mass, rope, or sliver, is proposed to be diminished.' In this case the rollers were only used to hold the thread. It was the spindles, which, revolving on themselves, stretched and possibly twisted it. This is practically the principle of Hargreaves' jenny. Thus, the two capital inventions which thirty years later were to provide the final solution to the problem of mechanical spinning, were both derived from Wyatt's machine.

As for the motor power, this was a question which at first the inventor does not seem to have thought of. But he assumed as a self-evident proposition that the motor power, whatever it was, would be able to work several machines at once. He pictured it to himself as a kind of mill, with wheels turned either by horses, water or wind.⁹³ Later on it struck him that his invention might be adapted to the needs of small-scale production: 'It may be found useful, where the spinners live remote from the clothiers, or when they have not the conveniency of such mills, to have small moveable ones made to spin the work of a family or two.'⁹⁴ Hargreaves' jenny was later on used in this way, whilst it was Arkwright's machine which gave rise to the big spinning mills.

Wyatt foresaw the factory system and its probable consequences. According to his calculations, the use of machinery was to reduce by one-third the labour required, the result being an obvious profit for the manufacturer. But would not this advantage involve a loss for the workers and the public? Wyatt did not think so: 'An additional gain to the clothier's trade naturally excites his industry as well as enables him to extend his trade in proportion to his gain by the machines. By the extension of his trade he will likewise take in some men of the 33 per cent. left unemployed. . . . Then he wants more hands in every other branch of the trade, viz. weavers, shearers, scourers, combers, etc. . . . These workmen now having full employ will be able to get more money.'

⁹¹ *Abridgments of Specifications relating to Weaving*, I, No. 562.

⁹² On this subject see the observations of A. Ure, *The Cotton Manufacture of Great Britain*, I, 209.

⁹³ Wyatt MSS., I, 34.

⁹⁴ *Ibid.*

in their families than they all could before.⁹⁵ The whole nation was to profit by it: 'Every such improvement in trade must certainly be a gain to the country, especially to a country which so much raises its trade as ours . . . as a man who can work quicker than his neighbours certainly brings more gain to his family, or if by improvement or by art he can make one of his family gain as much as the whole could before, he certainly gets what the remaining part of his family can get by any other means.'⁹⁶

This invention, which was to enrich England, did not at any rate succeed in enriching its authors. There is no evidence that it was applied before 1740, and meanwhile Lewis Paul had been imprisoned for debt, and the machine seized, together with his furniture.⁹⁷ Ultimately, however, a small factory—no doubt provided with capital by Paul's friends—was set up in Birmingham and run by the inventors themselves. The machine was worked by two donkeys, and was tended by ten female workers.⁹⁸ It has been asserted that this machine did not work well or produce good thread, which would explain the failure of the undertaking.⁹⁹ This does not correspond to evidence given by direct witnesses. Dr. James wrote to Warren, the bookseller: 'Yesterday we went to see Mr. Paul's machine, which gave us entire satisfaction both in regard to the carding and the spinning. . . . I am certain that if Paul could begin with £10,000 he must, or at least might, get more money in twenty years than the City of London is worth.'¹⁰⁰ One weak point of the machine was the frailty of its parts, which caused it to be frequently out of order, and occasioned expensive repairs.¹⁰¹

What is certain is that Paul and Wyatt never got their £10,000, and the factory, small though it was, had to be closed down. They went bankrupt in 1742¹⁰² and their invention was sold to Edward Cave, the editor of the *Gentleman's Magazine*. He tried to run things on a large scale. He set up a workshop at Northampton containing five machines, each fitted with fifty spindles. Like the silk-throwing mills in Derby, these machines were worked by water wheels, driven by water from the river Nen. Carding was done by cylindrical carding machines, invented by Lewis Paul.¹⁰³ The factory employed fifty workers of both sexes. Half of them carded the cotton, and the others supervised the machines and

⁹⁵ Wyatt MSS , I, 33 (Oct. 21st, 1736).

⁹⁶ Wyatt MSS , I, 32

⁹⁷ Letter from Lewis Paul, Jan 6th, 1739. Letter from Wyatt, April 17th Wyatt MSS., I, 50-57. It was then that Lewis Paul requested the Duke of Bedford to try his machine in the Foundling Hospital.

⁹⁸ Ch. Wyatt, *op. cit.*, p 81, *Local Notes and Queries* (Birmingham Library), 1889-93, Nos. 2811, 2815, 2832

⁹⁹ A. Ure, *Cotton Manufacture*, I, 217.

¹⁰⁰ R. Cole, *Some Account of Lewis Paul* (appendix to French's *Life of Crompton*, p. 256).

¹⁰¹ See B. P. Dobson, *Evolution of the Spinning Machine*, p. 50.

¹⁰² Wyatt MSS , I, 65, II, 82.

¹⁰³ Patent No 636.

tied the broken threads together.¹⁰⁴ What was lacking this time was not capital, but a no less indispensable factor to the success of an industrial enterprise, namely good administration, both from the commercial and the technical point of view. According to Wyatt's calculations, the undertaking should have produced over £1,300 a year profit. But, either by reason of the deficiency of the machine, or because of the lack of experience and the carelessness of the managers, it remained an unprofitable business,¹⁰⁵ barely maintaining its existence till 1764.¹⁰⁶ The plant ultimately was bought up by Richard Arkwright. Although its existence was always uncertain and attracted little notice, this Northampton factory was nevertheless the first cotton-spinning mill in England, and therefore the ancestor of all those factories whose innumerable chimneys now surround Manchester and Glasgow, Rouen, Lowell and Chemnitz, as well as Bombay and Osaka.

In Dyer's poem, which is devoted to a description and a eulogy of the woollen industry, there is a curious passage referring to Wyatt's invention. The author, while visiting a cloth factory in the Calder Valley, is shown

A circular machine, of new design
In conic shape it draws and spins a thread
Without the tedious toil of needless hands.
A wheel, invisible, beneath the floor,
To every member of th' harmonious frame
Gives necessary motion. One, intent,
O'erlooks the work the carded wool, he says,
Is smoothly lapp'd around those cylinders,
Which, gently turning, yield it to yon cirque
Of upright spindles, which with rapid whirl
Spin out, in long extent, an even twine¹⁰⁷

This is not conclusive evidence that Wyatt's machine was used for spinning wool before 1760. What Dyer probably did was to describe a model factory in which, by a legitimate fiction, he introduced the machine he had seen at work in the Northampton factory, the only one whose existence is an indisputable fact.¹⁰⁸

What is certain is that Wyatt's invention was not a practical success, and the efforts made to work it were hardly noticed, while weavers went on complaining of the scarcity and high price of thread. In 1760 the Society for the Encouragement of Arts and Manufactures, founded a few years earlier, published a note beginning thus: 'The Society has been informed that our manufacturers of woollen, linen and cotton find it exceedingly difficult, when the spinners are out at harvest work,

¹⁰⁴ Wyatt MSS., I, 76 and foll.

¹⁰⁵ *Remarks on Mr. Cave's Works at Northampton* (1743), Wyatt MSS., I, 82.

¹⁰⁶ Ch. Wyatt, *On the Origin of Spinning Cotton by Machinery*, p. 81.

¹⁰⁷ Dyer, *The Fleece*, Book III, lines 291-302.

¹⁰⁸ See the footnote to line 292: 'A circular machine—a most curious machine, invented by Mr. Paul. It is at present contrived to spin cotton, but it may be made to spin fine carded wool.' This clearly shows that on Dyer's own confession, the use of the machine for spinning wool was only a possibility, contrary to what is believed by H. Heaton (*The Yorkshire Woollen and Worsted Industries*, p. 356).

to procure a sufficient number of hands to keep their weavers employed, and that for want of proper dispatch in this branch of our manufacture the merchants' orders for all sorts of piece goods are often greatly retarded, to the prejudice of the manufacturer, merchant and nation in general . . . : the Society considered that there was every reason for encouraging all research which would put this right, and offered two prizes 'for the best invention of a machine that will spin six threads of wool, flax, cotton, or silk, at one time, and that will require but one person to work it and to attend it.'¹⁰⁹ Thus the problem was still unsolved, while its solution was awaited and demanded with growing impatience. If, twenty years earlier, Wyatt and Paul had met with such an insistent demand, their efforts would no doubt have been rewarded with better results. But they were too early. For an invention will suffer if it appears too long before the moment when the need it is meant to satisfy has reached its climax.

V

This moment had at last arrived. It is a curious thing that the two capital inventions, the success of which revolutionized the textile industry, made their appearance almost simultaneously. Hargreaves' spinning jenny and Arkwright's water frame¹¹⁰ were produced within a year or two of one another. The invention of the water frame seems to have been made about 1767, and that of the jenny about 1765. Both came into use in 1768, and the patents which, so to speak, notified their official birth, were taken out in 1769 and 1770 respectively. They are the double outcome of one current of economic causes.

But though the origins of these two inventions were the same, their consequences were very different. Even though they were in fact simultaneous, yet they represented two successive stages in industrial evolution. Hargreaves' invention was simpler and modified the organization of the work less deeply. It marked the transition between manual work and machine industry, between the domestic system, or small-scale 'manufacture,' and the factory system.

We know very little about the life and character of James Hargreaves. Between 1740 and 1760 we find him settled in the neighbourhood of Blackburn in Lancashire, where he combined the trades of weaver and carpenter.¹¹¹ It was no doubt in his capacity as carpenter that he came to deal with machinery. At that time, when there were no professional

¹⁰⁹ *Transactions of the Society for the Encouragement of Arts and Manufactures*, I, 314-15. 'Robert Dossie, who was well informed concerning the early history of the Society, tells us that their interest in the problem was aroused by knowledge of the unsuccessful spinning machine patented by Lewis Paul in 1738.' W. Bowden, *Industrial Society in England towards the End of the Eighteenth Century*, pp. 48-9. A man called Harrison in 1764 made a spinning wheel 'whereby a child might spin twice as much as a grown person can do with the common wheel.' A. Warden, *The Linen Trade*, 371.

¹¹⁰ Arkwright's claim to the invention was probably unfounded. See chap. II below.

¹¹¹ *A Complete History of the Cotton Trade*, p. 77.

engineers, their place was more or less filled by carpenters, locksmiths, or clock makers, in fact by anyone who was sufficiently used to working in wood and metal, and who could set up wheelwork or fit parts of machinery together. Among these emergency engineers a special place must be given to the millwrights, whose help was essential to the setting up of the first factories.¹¹² A millwright knew how to use a turner's, a carpenter's or a blacksmith's tools, he had some knowledge of arithmetic and practical mechanics. He could draw out a plan or calculate the speed and power of a wheel. All difficult cases were submitted to him, be it the mending of a pump, the working of pulleys or the setting up of a water-pipe. He had the reputation of being able to turn his hand to anything, and no one could do without him in any new venture.

Hargreaves had as his next-door neighbour a calico printer, the founder of the great Peel family. In 1762, Hargreaves built a carding machine for him, probably on Lewis Paul's model,¹¹³ and this was the beginning of his career as an engineer and an inventor.

The widening gap between spinning and weaving was producing real uneasiness in the industry. There was much unemployment among weavers, and merchants were always wondering how they could manage to satisfy the ever-growing demand. In Lancashire, where so many were dependent on the textile industry, the question was constantly discussed, and every one was trying to find an answer.¹¹⁴ Many attempted the problem which Hargreaves finally solved.¹¹⁵

The machine in its original form was very simple, both in its structure and operation. It consisted of a rectangular frame on four legs. At one end was a row of vertical spindles. Across the frame were two parallel wooden rails, lying close together, which were mounted on a sort of carriage and slid backwards and forwards as desired. The cotton, which had been previously carded and roved, passed between the two rails and then was wound on the spindles. With one hand the spinner worked the carriage backwards and forwards, and with the other he turned the

¹¹² Their trade was a branch of carpentry (with some assistance from the smith), but rather heavier work, yet very ingenious, to understand and perform which a person ought to have a good turn of mind for mechanics, at least to have some knowledge in arithmetic, in which a lad ought to be instructed before he goes to learn his art: for there is a good deal of variety in mills, as well as in the structure and workmanship of them, some being worked by horses, some by wind, others by water shooting over, and some by its running under and why not in time by fire also, as well as engines? W. Fairbairn, *Mills and Millwork*, I, V-VI; see Webb MSS, Engineering Trades, I

¹¹³ *A Complete History of the Cotton Trade*, p. 79. Paul's machine was very simple and consisted of a sort of concave trough fitted with metal teeth, and of cylindrical carders worked by a handle

¹¹⁴ See the typical conversation between Kay the clockmaker and Richard Arkwright in a public-house at Warrington (*The Trial of a Cause instituted by R. P. Arden, Esq., His Majesty's Attorney General by Writ of Scire Facias, to repeal a Patent granted on the 16th December, 1775, to Mr. Richard Arkwright*, p. 63.)

¹¹⁵ Thus Hargreaves could be accused of not being the first or the sole author of his invention. See R. Guest, *The British Cotton Manufacture*, pp. 176-80.

handle which worked the spindles. In this way the thread was drawn and twisted at the same time.¹¹⁶

Such was the principle of the jenny, the idea of which, according to tradition, Hargreaves had conceived by watching a spinning wheel that had been knocked over lying on its side and still revolving for a few seconds, while the thread, held between two fingers, seemed to go on spinning itself. The jenny had one great advantage over the spinning wheel, from which it was obviously derived,¹¹⁷ in that a single workman could spin several threads at once. The first models built by Hargreaves had only eight spindles. But this number could be increased without any limit, save that of the motor power. Even during Hargreaves' lifetime jennies with eighty or more spindles were constructed.

Did Hargreaves realize the whole importance of his invention? He at any rate let several years go by before he made it public. At the start, he confined himself to trying it in his own house. Only in 1767 did he make a few machines for sale, and at once fell a victim to that unpopularity which inventors in those days seldom escaped. Blackburn workers broke in his door and smashed his machines.¹¹⁸ He moved to Nottingham. There, as in Lancashire, the textile industry was in the throes of a crisis, due to the insufficiency of the old-fashioned methods of spinning.¹¹⁹ Then it was that he took out his patent¹²⁰ and began to profit by his invention. He sold a large number of jennies, and would have made his fortune had he not, like John Kay, had to contend with the dishonesty of manufacturers. He brought an action against the men who had refused to pay him. The interests involved were already so large that he refused £3,000, which were offered him for his rights in the invention.¹²¹ Unfortunately for him, the courts held that the model of his jenny had been used in industry before it was patented, and his rights were therefore declared to have lapsed. Like his predecessors, he had, therefore, to endure severe disappointments, but it is quite untrue that he died in want, as Arkwright tried to make out, in order to create sympathy for himself both in Parliament and with the public.¹²² On the contrary, we know that Hargreaves, though still poor in 1768, in 1778 left over £7,000 to his heirs.¹²³ A trifling sum, of course, if compared with the immense amount of wealth produced by

¹¹⁶ *Abridgments of Specifications relating to Spinning*, p. 19 (No. 962), *Transactions of the Society for the Encouragement of Arts and Manufactures*, II, 32–35, J. James, *History of the Worsted Manufacture*, pp. 345–46, R. Guest, *Compendious History of the Cotton Manufacture*, pp. 13–14, E. Baines, *History of the Cotton Manufacture*, p. 158

¹¹⁷ ‘The jenny is only a multiplied wheel.’ A. Ure, *The Cotton Manufacture of Great Britain*, I, 203

¹¹⁸ Abram, *History of Blackburn*, pp. 205–6.

¹¹⁹ J. Felkin, *History of the Hosiery and Lace Manufacture*, pp. 81–97

¹²⁰ No. 962 (1770).

¹²¹ A. Ure, *The Cotton Manufacture*, I, 198.

¹²² ‘The Case of Richard Arkwright,’ in *The Trial of a Cause*, etc., p. 98.

¹²³ Abram, *History of Blackburn*, p. 209.

the invention of the spinning jenny. Ten years after Hargreaves' death it was reckoned that there were no fewer than twenty thousand of these machines in England, of which the smallest could do the work of six or eight spinners.¹²⁴ In Lancashire they spread with astonishing rapidity, and in a few years had completely ousted the spinning wheel.¹²⁵ After this, the woollen industry, which in that part of England had never done very well, was almost given up: 'Cotton, cotton, cotton, had become the almost universal material for employment; the hand-wheels . . . were all thrown into lumber rooms, the yarn was all spun on common jennies.'¹²⁶ The jenny was a simple machine, and could be built at a slight cost. It took up very little room and so did not involve the setting up of special workshops. It could be worked without any outside motor power, and its use did not interfere much with the worker's habits. Outwardly, at any rate, it did not cause any great alteration in the organization of the industry. This was certainly one of the reasons why it was so quickly successful. Far from destroying the cottage industry, it seemed at first to revive it. It was found in the workshops managed by small employers who worked with their own hands, and in farms where the spinning wheel had for generations added its earnings to those of the plough. But the rapid increase of the output, and the importance of mechanical equipment, as compared with labour, already heralded the coming of the factory system. And, while in cottages Hargreaves' jenny was taking the place of the old-time spinning wheel, in Nottingham, Cromford, Derby, Belper, Chorley and Manchester, Richard Arkwright's spinning mills were being built.

¹²⁴ *An Important Crisis in the Calico and Muslin Manufacture of Great Britain*, p. 2 (1788).

¹²⁵ J. Kennedy, *A brief Memoir of Samuel Crompton* (*Memoirs of the Literary and Philosophical Society of Manchester*, Series II, v. 330), R. Guest, *The British Cotton Manufacture*, p. 147.

¹²⁶ W. Radcliffe, *Origin of the new System of Manufacture*, p. 61 (describing the conditions in the village of Mellor).

The Factories

Arkwright's name is one of the few which from the beginning shone like stars in the twilight which has long surrounded so many of the events and personalities of economic history. In him tradition sees not only the prototype of the great manufacturer, made rich by his own toil and his own inventions, but the true founder of the modern factory system.¹ About 1830, he became the hero of political economy,² and even literature did not despise him. Carlyle has sketched a vivid picture of this 'plain, almost gross, bag-cheeked, pot-bellied Lancashire man, with an air of painful reflection, yet also of copious free digestion. . . . O reader, what a historical phenomenon is that bag-cheeked, pot-bellied, much enduring, much inventing barber! French Revolutions were a-brewing: to resist the same in any measure imperial Kaisers were impotent without the cotton and cloth of England; and it was this man that had to give England the power of cotton.'³ But these lines refer only to the immediate consequences of the transformation of industry which, according to Carlyle, were due to Arkwright's genius. We should have to turn to another of Carlyle's books⁴ to find a vivid description of the new world, born of the industrial revolution, that new world which he compared so bitterly with his idealized picture of the past. Our task here is to define exactly the part which Arkwright actually did play. If we can determine the place he really deserves to occupy, we shall help to solve a more important problem. For in order to appreciate correctly the share of individual action in the genesis of social changes, we should first separate the facts from legends which have grown up round them, and which often lay too much stress upon the individual factor as compared with more general causes.

I

Richard Arkwright was born at Preston on December 23rd, 1732, the youngest of a large and poor family.⁵ While still quite young, he was apprenticed to a barber and wig-maker, and just found time in which to learn to read and write. At fifty, he was taking lessons in grammar and

¹ See for instance the story of his career in *A Complete History of the Cotton Trade*, pp. 92 and foll.

² See A. Ure, *Philosophy of Manufactures*, pp. 15 and foll.

³ R. Carlyle, *Chartism*, Chap. VIII (New Eras). *Miscellaneous Essays*, Chapman & Hall edition, p. 166

⁴ *Past and Present*.

⁵ R. Guest, *Compendious History of the Cotton Manufacture*, p. 21; Whittle, *History of Preston*, II, 213; Hardwick, *History of the Borough of Preston*, pp. 361 and foll.; E. Baines, *History of the Cotton Manufacture*, p. 52.

spelling. In 1750, he set up at Bolton, a few miles from his small native town, where for a long time he plied his trade of barber, first of all in a basement, and then in a very humble shop. He was married twice. His first wife came from Leigh, between Warrington and Bolton⁶—a detail of some interest. The second brought him some money, which enabled him to leave his shop and to go in for a more paying occupation, that of a dealer in hair. He attended markets, and visited farms in order to buy the hair of country girls. He then treated it with a dye of his own making and resold it to the wig-makers who, in that century of wigs, were ready buyers.⁷

This story of Arkwright's early life is not only interesting in itself, but gives us an insight into his character and thus helps us to judge of the part he actually played. We must first note that there was nothing about him which suggested an inventor's career. He had no technical experience, for he was not a weaver like John Kay and Hargreaves, or a carpenter and mechanic like Wyatt. He must have learnt everything he knew of the textile industry, of its needs and of the crisis it was undergoing, through conversations in his barber's shop or during his rounds in Lancashire villages. On the other hand, he displayed very early those qualities which explain his success. He was anxious to better himself, he had fertile brains for devising means of rising in the world, and he knew how to drive a good bargain, the sort of diplomacy in which he had been trained being akin to that of the pedlar or the horse-dealer.

The origins of his main invention are wrapped in a curious obscurity. Now that it is difficult to understand how he came to be interested in the problem of mechanical spinning, for every one in Lancashire knew that there was a fortune to be made out of it. But though he was several times asked to prove his claim as an inventor, he was never able to give any but vague and embarrassed explanations, and this for very good reasons.⁸ No end of ridiculous and conflicting stories, which he was careful never to deny, were circulated during his lifetime by his admirers. According to some people, the principle of the spinning machine had been suggested to him by a cylindrical wire-drawing machine, which drew out a bar of red-hot iron.⁹ According to others, he had studied at Derby the working of the silk-throwing machines,¹⁰ or, in his barber's

⁶ R. Guest, *The British Cotton Manufacture*, p. 14

⁷ Id., *Compendious History*, p. 21

⁸ See p. 234 below the history of the case which ended in the cancelling of his patent. In the course of the proceedings evidence was given that his chief invention had been borrowed, to use a polite word, from a certain Thomas Highs, of the village of Leigh in Lancashire

⁹ *Beauties of England and Wales*, III, 518 (information given by the son of Jeremiah Strutt, one of Arkwright's partners) It is hardly necessary to point out that no serious comparison can be made between the drawing out by compression of a solid mass of metal and that of making thread out of the fibres of cotton or the staples of wool

¹⁰ *Gentleman's Magazine*, LXII, 863 This analogy again is quite superficial. The throwing process only strengthens a thread already made by the silk worm, who in this case plays the part of spinner

shop, he had overheard a sailor describe a machine used by the Chinese,¹¹ or he had learnt a precious secret from a certain Brown, a cabinet-maker, who had himself discovered it no one knew how, and who, for equally mysterious reasons, was unable to make use of it.¹² An equally improbable story shows us Arkwright seized, about 1768, by a sudden and unexpected passion for mechanics, and put on the track of his invention by researches into the problem of perpetual motion.¹³

While the history of the invention is so obscure, the story of Arkwright's ventures is clear and easy to follow. The machine was made, in 1768, in a room adjoining the Free Grammar School at Preston.¹⁴ Arkwright had enlisted the help of a Warrington clockmaker, a namesake of Kay the inventor of the fly shuttle. As we shall see, this collaboration accounts for many things. Apparently Arkwright had had great difficulty in raising the necessary funds. He first turned to a scientific instrument-maker, who refused to take him seriously,¹⁵ and then to one of his friends, a publican called John Smalley.¹⁶ The next year he took out his patent of invention, valid for fourteen years.¹⁷

We can not only read the text of this patent, but also see the original model of the machine itself, preserved at the South Kensington Museum.¹⁸ It is made entirely of wood, and is about thirty-two inches high. As far as we can judge, it is very like the machine invented in 1733 by John Wyatt, and improved by Lewis Paul. A wheel sets in motion four pairs of rollers of increasing rapidity of rotation. The top cylinder of each pair is covered with leather, whilst the lower one is ribbed or grooved lengthwise. After it has gone through the rollers, whose progressive acceleration stretches it more and more, the thread is twisted and wound on vertical spindles. Generally speaking, this machine only differs in its details from that of Wyatt. These trifling differences cannot explain Arkwright's triumphal success in a line where more ingenious men than he had been hopeless failures. His success was due to his business capacity, of which he gave proof almost at once.

It was, above all, necessary to raise capital. Smalley was not rich enough, and Arkwright already dreamed of big business. For this reason

¹¹ *Wool encouraged without Exportation, or practical Observations on Wool and the Woollen Manufacture* (1791), p. 50.

¹² *Mechanics' Magazine*, VIII, 199.

¹³ R. Guest, *Compendious History*, p. 21, A. Ure, *The Cotton Manufacture of Great Britain*, p. 224. The story is quoted, probably from R. Guest, in an article on 'Cotton-spinning Machines and their Inventors,' *Quarterly Review*, CVII, 59.

¹⁴ 'The Case of Richard Arkwright,' in *The Trial of a Cause*, etc., p. 98. The date has never been questioned, and Arkwright, to whose interest it would have been to have had it put a year or two earlier, never did so.

¹⁵ E. Baines, *History of the Cotton Manufacture*, p. 155.

¹⁶ Publican and house painter. See Guest, *Compendious History*, p. 22, Whittle, *History of Preston*, II, 216.

¹⁷ No. 931 (July 3rd, 1769).

¹⁸ Victoria and Albert Museum, Machinery and Inventions Division (Southern Galleries), No. 1252 (354). Notice in the *Catalogue of the Machinery, Models, etc., in the Machinery and Inventions Division of the South Kensington Museum*, II, 104.

following the example of Hargreaves, whose misadventures he was familiar with, he migrated to Nottingham.¹⁹ We know that this town was the centre of the stocking frame industry, in which a capitalistic organization had followed the development of mechanical equipment. Arkwright succeeded in interesting in his schemes the local bank of Wright Brothers. There were still very few of these provincial banks, and they were therefore all the more important in the districts they catered for. But profits no doubt did not follow rapidly, or the success of the venture was not so great as the dazzling promises of the inventor had pictured it, for at the end of a year the Wrights withdrew their support.²⁰ Arkwright knew how to extricate himself from his difficulties. In 1771 he entered into a contract with two rich hosiers, Need of Nottingham, and Strutt of Derby.²¹ Need and Strutt belonged to the class of merchant manufacturers. They employed a large number of workers in their own homes, and also had workshops where stockings were knitted on frames. Thus it was on a system of production akin to 'manufacture,' if not on 'manufacture' itself, that the factory system was grafted.

II

The first workshop set up by Arkwright at Nottingham was hardly larger than the one Wyatt and Paul had established in Birmingham thirty years before. It had but a few machines, which were worked by horses.²² It was in 1771, the year he joined forces with Need and Strutt, that Arkwright settled at Cromford, near Derby. Cromford lies on the Derwent, at a point where the river runs swift and powerful through a narrow gorge, quite close to the picturesque hills of its origin. A little way above, the hot waters of Matlock flow into it and prevent it from ever freezing in winter. It was therefore a suitable place for building a mill. The word *mill* continued to mean a factory long after steam had almost everywhere taken the place of water power. The brothers Lombe's factory, a few miles away, was the model taken for the building and the workshops.²³ In a few years the Cromford spinning mill had grown up, and by 1779 it contained several thousand spindles and employed three hundred workmen.²⁴

That which made the success of the undertaking quite certain was not only the rapidity but the quality of the production. The new machine (the water frame²⁵ as it was called, to distinguish it from the jenny,

¹⁹ 'The Case of Richard Arkwright,' in *The Trial of a Cause, etc.*, p. 98

²⁰ F. Espinasse, *Lancashire Worthies*, I, 388, Tuckett, *History of the Past and Present State of the Labouring Population*, I, 212

²¹ On Jedediah Strutt, see Felkin, *History of the Hosiery and Lace Manufacture*, pp. 89-97.

²² Espinasse, *Lancashire Worthies*, I, 390

²³ R. Guest, *Compendious History*, p. 26

²⁴ R. March, *A Treatise on Silk, Wool, Worsted and Cotton* (1779), Foxwell Library, E. Butterworth, *History of Oldham*, p. 118

²⁵ A model of a water frame with eight spindles is exhibited at the Victoria and Albert Museum, Machinery and Inventions Division, No. 1253 (355), Catalogue, II, 105

which was worked by hand) produced a much stronger thread than the most skilled spinner could have made with a spinning wheel. Instead, therefore, of weaving materials which were partly linen and only partly cotton, it became possible to weave pure cotton goods, which were as perfect, in every respect, as their Indian models. At first the Cromford factory was only an appendage to those of Need and Strutt. All the thread it spun was used solely for making stockings. But in 1773, Arkwright and his partners set up weaving workshops in Derby, where, for the first time, pure cotton calicoes were made.²⁶

At this point an obstacle arose. The small manufacturers, who had viewed this dangerous competition with great dislike, thought that at last they had found a way of putting a stop to it. The Act of 1735, which allowed the manufacture of mixed materials, had confirmed the prohibition of printed cotton goods; the possibility of a similar industry being established in England had not been foreseen. It was possible, therefore, to maintain that the Act applied to the case of Arkwright and his partners, and their cotton goods, already subject to a heavy excise duty,²⁷ ran the risk, if they were made into the then fashionable prints, of being seized as prohibited goods.

Arkwright defended his industry before Parliament. Should a law which was intended merely to prevent foreign goods from coming into the kingdom be enforced against goods made in England by English workmen? Properly licensed, and subject to moderate taxation, this new industry could not fail to become a source of wealth for the whole country: 'The said manufacture, if not crushed by so heavy a duty, will rapidly increase and find new and effectual employment for many thousand British poor, and increase the revenue of this Kingdom. . . . Cotton goods so made wholly of cotton will be greatly superior in quality to the present species of cotton goods, made with linen yarn warps, and will bleach, print, wash and wear better.' Arkwright therefore requested that 'leave might be given to bring in a bill for ascertaining the rate of duty on the said white cotton stuffs, wholly made of cotton wool, and manufactured within the Kingdom of Great Britain, when printed, painted, stained, or dyed, at 3d. per yard only, and for the free vending, wearing and using by all persons, in apparel, household stuff, furniture, or otherwise, any sort of the said cotton stuffs. . . .'²⁸ Parliament, after a short inquiry,²⁹ agreed to these very justifiable requests.³⁰

²⁶ 'The Case of Richard Arkwright,' in *The Trial of a Cause, etc.*, p. 99; *A second Letter to the Inhabitants of Manchester on the Exportation of Cotton Twist*, p. 9, *A Complete History of the Cotton Trade*, p. 101.

²⁷ 6d. a yard. See *Journals of the House of Commons*, XXXIV, 496-97.

²⁸ *Journals of the House of Commons*, XXXIV, 497 (1774).

²⁹ *Ibid.*, 709.

³⁰ 14 Geo. III, c. 72. The text of this Act reproduces almost word for word the terms of Arkwright's petition save with regard to export bounties which he asked for but did not obtain.

From that time onwards, the cotton industry, and with it machine industry, was able to develop without impediment.

The following year (1775), Arkwright took out his second patent,³¹ the very long and obscure text of which was to give rise to endless difficulties. It described several distinct inventions, of varying importance, and of which some seemed only to have been included (as was afterwards pointed out) in order to puzzle and put off too inquisitive readers.³² The most important were the carding machine, the crank and comb, the roving frame and the feeder. The carding machine consisted of three cylinders of different diameters, covered with bent metal teeth. The first, with teeth bent in the direction of its revolution, caught up the cotton fibres. The second, revolving in the same direction, but much faster, carded the fibres by contact with the third, whose teeth and motion were in the opposite direction.³³ The crank and comb completed the carding machine, by detaching the carded cotton in such a way that it came off as a continuous sheet. As its name indicates, it was a kind of comb, fitted to an elbow-shaped joint, which, at regular intervals, came in contact with the teeth of the third cylinder, and thus disengaged the cotton without tearing it.³⁴ The roving frame was a machine which turned the ribbon of carded cotton into a cylindrical strand slightly twisted on itself, and ready for conversion into thread. Its structure resembled the spinning machine, but it was simpler, and the acceleration between one pair of cylinders and the other was much less. Instead of winding itself off on spindles, the cotton went into a revolving cone, which gave it the necessary twist.³⁵ Finally, the feeder was nothing but a band of material in perpetual revolution, which carried the raw cotton to the carding machine, as it was fed to it by a sloping hose. We venture to go into all these details, at the risk of incurring the criticism of experts, in order to show what part machinery already played in the cotton industry. We see that as early as 1775 textile machinery had developed into a system, the interdependent parts of which were able to perform all the successive operations of the industry, save the last and most difficult, that of weaving.

In the specification attached to his new patent, Arkwright had been careful to insert several articles relating to real or pretended improvements of the spinning machine. In this way he hoped to extend for

³¹ No. 1111 (Dec. 16th, 1775). See *Abridgments of Specifications relating to Spinning*, p. 19. The writ of the case of 1785 gives the full text of the patent. See *The Trial of a Cause, etc.*, pp. 4-10.

³² For instance, that which appears as the heading to the specification: 'A hammer for beating flax.'

³³ Victoria and Albert Museum, Machinery and Inventions Division, No. 1244 (357), Catalogue, II, 98.

³⁴ Victoria and Albert Museum, Machinery and Inventions Division, No. 1244 (357), Catalogue, II, 98.

³⁵ Victoria and Albert Museum, Machinery and Inventions Division, No. 1251 (353), Catalogue, II, 103 (improved model made in 1780).

a few years the validity of his first patent, which would expire in 1783. Confident of the future, he went on and multiplied his ventures. In 1776, he set up a third spinning mill at Belper, between Cromford and Derby.³⁶ At that time, therefore, his various factories were concentrated in a small area, along the Derwent and the Trent, and all outside Lancashire. Yet it was in Lancashire that the English cotton industry had first developed, and that its growth still found the most favourable conditions. Arkwright, who was poor and unknown when, a few years before, he had left his native county, went back already rich and famous. He founded several factories there. One at Birkacre near Chorley³⁷ was supposed to be the largest factory yet built in England.³⁸ It was sacked and burnt down in 1779, during the anti-machine riots, to which we shall have to return later. The loss was estimated at £4,400.³⁹ Another spinning mill, set up in 1780 in Manchester, was equally, if not more, important: the buildings alone, which could hold six hundred workmen, cost over £4,000.⁴⁰ Arkwright's partnership with Need and Strutt, the stocking manufacturers, could not supply him with the necessary capital for all his new undertakings. He was able to find other partners as he needed them, and very skilfully limited their rights. He alone was present everywhere, took part in every concern, and in fact managed them all.⁴¹

His two patents of 1769 and 1775 gave him the exclusive ownership of the water frame and the accessory inventions. But he could authorize their use by other persons, who had to pay a stipulated royalty.⁴² In this way, between 1775 and 1780, a certain number of new undertakings were started, which were more or less subsidiary to his. Amongst others, we may mention those of Altham, of Buxton and of Bury, which belonged to the two Robert Peels, the grandfather and father of the statesman.⁴³ But jealousy, as well as the desire for money, led spinners to dishonest practices. They racked their brains to construct machines which differed, even though only in detail, from those of Arkwright.⁴⁴ In 1781, he adopted the course of bringing an action for infringement.

³⁶ F. Espinasse, *Lancashire Worthies*, I, 421; A. Ure, *The Cotton Manufacture*, I, 257. The Milford spinning mill, which belonged to Jedediah Strutt, was built about the same time.

³⁷ Between Preston and Wigan.

³⁸ It could hold 500 workmen. E. Butterworth, *History of Oldham*, p. 118.

³⁹ See *Manchester Mercury* of Oct. 12th and 16th, 1779, and Arkwright's petition to the House of Commons, *Journals of the House of Commons*, XXXVII, 926.

⁴⁰ F. Espinasse, *Lancashire Worthies*, I, 421.

⁴¹ E. Butterworth, *op. cit.*, p. 118, mentions the firm of Arkwright, Simpson & Whittenbury of Manchester. In Scotland, Arkwright was at one time the partner of David Dale, Owen's father-in-law (R. Dale Owen, *Threading My Way*, p. 7). His association with Need and Strutt only lasted till 1781: see Felkin, *History of the Hosiery and Lace Manufacture*, p. 97.

⁴² *The Trial of a Cause*, etc., p. 99.

⁴³ Sir Lawrence Peel, *A Sketch of the Life and Character of Sir Robert Peel*, p. 20, Wheeler, Manchester, pp. 519-20.

⁴⁴ *The Trial of a Cause*, etc., p. 101.

of patent against nine of them.⁴⁵ They defended themselves by pointing to the suspicious obscurity of the patent. How could they know what belonged to the inventor, when he himself either would not or could not define it clearly? Arkwright lost his case, and his patent rights were in consequence suspended before reaching the date of their normal expiration.

He would not be beaten. On February 6th, 1782, he addressed a petition to Parliament, asking, not only for a confirmation, but for an extension of his rights.⁴⁶ At the same time he brought out a memorandum⁴⁷ in which he pointed out the importance of his inventions, recalled the sacrifices he had made for them, referred again to the fraudulent manoeuvres of his competitors, and exalted his own merit. He allowed that the patent of 1775 was not perfectly clear, but said he had drawn it up in this way because of his patriotic scruples, and in order to prevent foreigners from profiting by such an inexhaustible source of wealth. Surely he who would rather lay himself open to unjust suspicion than compromise the fortunes of his country, deserved to receive help against his enemies. But Parliament turned a deaf ear to his entreaties.

Arkwright then applied again to the courts. He began a fresh action against one of his competitors, Peter Nightingale. In February, 1785, the case was heard in the Court of Common Pleas. The arguments centered entirely on the obscurity of the specification attached to the second patent. Arkwright again boasted of his patriotism, referred to the French (this took place just after the American war) who would have been only too glad to possess themselves of an industry, which till then had been purely British. Several important witnesses gave evidence in his favour. James Watt, the inventor of the steam engine, declared that, after having read the document under dispute, it seemed to him to be sufficiently clear, and that, if necessary, he would undertake the construction of the various machines mentioned in the patent, without further explanations.⁴⁸ This time Arkwright won his case. The Court confirmed the validity of his rights and granted the shilling damages he had asked for.

But this judgment interfered with so many vested interests⁴⁹ that it

⁴⁵ There were nine distinct summonses. But only one case was heard, that of Arkwright v. Mordaunt. See Baines, *History of the Palatine County of Lancaster*, II, 447.

⁴⁶ *Journals of the House of Commons*, XXXVIII, 687.

⁴⁷ This memorandum was probably drafted by one of his lawyers. It appears in extenso in *The Trial of a Cause, etc.*, pp. 97 and foll. (*The case of Messrs. Richard Arkwright & Co. in relation to Mr. Arkwright's invention of an engine for spinning cotton, etc., into yarn, stating his reasons for applying to Parliament for an Act to secure his right in such invention, or for such other relief as to the Legislature shall seem meet.*)

⁴⁸ *Richard Arkwright versus Peter Nightingale* (Court of Common Pleas, Feb 17th, 1785), pp. 3*-7*. See also evidence of Wilkinson, pp. 2*-3*, John Stead, p. 9*; Erasmus Darwin, p. 15*, Th. Wood, p. 19*.

⁴⁹ E. Baines, *History of the Cotton Manufacture*, p. 184. The undertakings started by Arkwright's competitors represented then a capital of about £300,000.

was bound to be contested. The Lancashire and Derbyshire spinners⁵⁰ combined to fight out the cause they had first won and then lost, for there was an obvious contradiction between the judgments of 1781 and 1785. They had the case brought before the Court of King's Bench by a writ of *scire facias*. There they not only attacked the terms of the patent, but they tried to prove that its obscurity, intentional or otherwise, concealed a fraud.

III

The incident on which the whole case hinged, and which decided the issue, was the appearance in court of Thomas Highs.⁵¹ This man declared on oath that, as early as 1767, he had, in his own village of Leigh, built a spinning machine which was identical with the one of which Arkwright pretended to have been the inventor. He had been helped in the adjustment of the various parts by a clockmaker, who turned out to be that very John Kay of Warrington who had been employed by Arkwright a year later⁵² This statement was confirmed by that of Kay himself. He related how in 1768 he had made the acquaintance of Arkwright, who was then a barber and horse-dealer. Arkwright had called on him, had given him some trifling job, and had then taken him off to a public-house. There the conversation had turned on the question with which the whole neighbourhood was humming, that of spinning by rollers: 'He said. That will never be brought to bear; several gentlemen have almost broke themselves by it I said: I think that I could bring that to bear. That was all that passed that night.' Early the next morning Arkwright came to him again, asking whether he could build a model of a spinning machine. 'I went and bought a few articles, and made a small wooden model, and he took it with him to Manchester.⁵³

The reader will remember that Arkwright had married a woman from Leigh. He had known Highs for several years,⁵⁴ and had no doubt heard of his invention. Moreover, it was not by chance that he called on Kay at Warrington. It was only a little while after this interview that he suddenly, and without any preparation, appeared as an inventor. Moreover, his relations with Kay in the following years were somewhat unaccountable. He began by taking him into his service. Then they suddenly fell out. Arkwright accused Kay of theft and embezzlement, and the latter fled.⁵⁵ This would naturally have roused some suspicion of Kay's evidence, and Adair, Arkwright's counsel, did not

⁵⁰ The list of names will be found in Wheeler, *Manchester*, p. 522. Robert Peel is there, and also Peter Drinkwater, who was one of the first spinners to make use of the steam engine.

⁵¹ In the report (*The Trial of a Cause, etc.*, pp. 57 and foll.) his name is spelt Hayes, but R. Guest spells it Highs, as written in the parish register of the village of Leigh (*The British Cotton Manufacture*, p. 18).

⁵² *The Trial of a Cause, etc.*, pp. 57-58

⁵³ *Ibid.*, pp. 62-63

⁵⁴ *Ibid.*, p. 59

⁵⁵ *Ibid.*, pp. 65-66.

miss the opportunity. Could anyone hesitate between the word of a well-known and respected man and that of a workman dismissed for dishonesty, who was trying to avenge himself?⁵⁶ But it must be noted that the charge against Kay had remained indefinite, and had never led to any prosecution or inquiry. His flight is quite sufficiently explained by threats, whether justified or not, which had been levelled at him for 'there is not a more miserable or dangerous situation for a poor man than to be in possession of a secret of which a powerful and rich man dreads the discovery.'⁵⁷

But, if Highs was really the author of the machine attributed to Arkwright, why did he wait twenty years before asserting his rights?⁵⁸ It is certainly very surprising, but it becomes less so when we know the life and character of the man. He belonged to that class of born inventors whose type we are familiar with. He was a simple uneducated mechanic, working by instinct, at home only in his workshop, and knowing nothing of business. He several times tried to set up a spinning mill on his own account, but he always came to grief for lack of capital and business ability.⁵⁹ Above all, he lacked the strenuous will to make a fortune which gave Arkwright his resolution and his power. He was content to rise from the rank of a workman comb-maker⁶⁰ to that of an engineer in the employ of millowners. He several times gave proof of his inventive talent. In 1772, on the Manchester Exchange, he exhibited a double jenny with fifty-six spindles, for which he won a two hundred guinea prize.⁶¹ According to witnesses, whose belated and somewhat questionable evidence was collected after his death by his biographer and apologist Richard Guest, he was not only the inventor of the water

⁵⁶ *Ibid.*, p. 109.

⁵⁷ Bearcroft, counsel for the Crown in *The Trial of a Cause*, etc., pp. 166-67. It is not unlikely, as supposed by Guest (*The British Cotton Manufacture*, p. 43), that Kay had made himself inconvenient, perhaps by demanding a partnership in Arkwright's business.

⁵⁸ This is the most serious argument used by G. W. Daniels (*The Early British Cotton Manufacture*, p. 110) to disprove the evidence given in Court by John Kay and by Thomas Highs himself. 'The great difficulty is to understand why Highs' claim was allowed to lie so long in abeyance, seeing that he was not without friends in Manchester, who, it may be assumed, would not have been slow to attack Arkwright's patent, had the slightest opportunity been offered.' There can be no doubt about the feelings and desires of Arkwright's competitors. But how is it that Arkwright, or his counsel, made no use of this argument, but simply declared that Kay and Highs were false witnesses? Mr. Daniels thinks that Arkwright may have known something of Lewis Paul's (or Wyatt's) machine but is it not again surprising that Arkwright should never have said a word about it, when it might have saved both his patent and reputation, and that he never gave any clear and satisfactory account of the origin of his invention? Mr. Daniels writes that the evidence put forward by Guest (in 1823) on behalf of Highs rests mainly on statements made by old men sixty years after the event (*op. cit.*, p. 96) we shall simply observe that all the evidence quoted here is taken from the report of the case published the same year (1785), the value of its corroboration by Guest's witnesses remaining an open question.

⁵⁹ R. Guest, *op. cit.*, pp. 203-5.

⁶⁰ He made combs for the weaving looms.

⁶¹ R. Guest, *op. cit.*, p. 203.

frame, but, before Hargreaves, of the jenny, and the name of this machine, which has never been explained, was that of one of his daughters.⁶²

Even if this were an established fact, it would not follow that Hargreaves should be regarded as a mere pirate. He may have rediscovered something which someone else had invented before him, and of which he was unaware. The case of Arkwright is quite different. The fact that he previously had no knowledge either of spinning or mechanics, and his suspicious dealings with Kay, make it fairly clear how he may have come into possession of another man's invention. Moreover, he seems to have tried to ward off suspicion: when he took out his first patent he described himself falsely as a clockmaker, probably in order to suggest that he had some knowledge of mechanics.⁶³ An even more interesting document is the account by Highs of an interview between him and Arkwright which took place at Manchester in 1772: 'We fell into conversation and I began to tell him he had got my invention. I told him I had shown the model of it to Mr. John Kay, the method I intended to use the rollers, because John Kay's wife had told me that before, how it happened, and Mr. Arkwright and them could never deny it. . . . He said very little about it: when I told him, he never would have had the rollers but through me, he put his hand down in this way, and never said a word. . . . Also he told me, when I told him it was my invention: Suppose it was, he says, if it was, he says, if any man has found out a thing, and begun a thing, and does not go forward, he lays it aside, and another man has a right in so many weeks or months (I forget now) to take it up, and get a patent for it.'⁶⁴ What can be thought of Arkwright's silence in court, when faced with such definite accusations? His counsel, in his name, said that both Highs and Kay were false witnesses, but Arkwright never produced any satisfactory explanation of the origin of his invention.

For lack of any proof to the contrary,⁶⁵ we must therefore admit that

⁶² R. Guest, *op. cit.*, pp. 176-80 (being the evidence given by Th. Leather and Th. Wilkinson before the parish clerk of Leigh on Aug 29th, 1823, and Nov 1st, 1827). What prevents us from unreservedly believing the evidence of these two witnesses is that when the events in question had taken place, half a century before, they were only twelve and fourteen years old respectively. A Held (*Zwei Bücher zur sozialen Geschichte Englands*, p. 591) believed he could conclude that the jenny was invented by Highs and improved by Hargreaves. In this case I am inclined to share Mr Daniels' scepticism.

⁶³ 'Richard Arkwright of Nottingham in the County of Nottingham, clockmaker.' See *Calender of Home Office Papers*, 1766-69, p. 425. Ure, who has heaped most exaggerated praise on Arkwright, tries to justify him. 'As Mr. Arkwright had thus [by making Kay's acquaintance] evidently directed his attention to clock-making, and naturally enough supposed himself the author of some improvements in that art [italics ours] he chose to designate himself clock-maker in the drawing-roller patent of 1769—a very pardonable assumption.' A. Ure, *The Cotton Manufacture of Great Britain*, I, 221. A very artless explanation.

⁶⁴ *The Trial of a Cause, etc.*, p. 59

⁶⁵ The only fact of importance produced in Arkwright's favour was this. Highs acknowledged (*Trial*, p. 58) that he did not give his cylinders their final form (one half grooved and the other covered with leather) till 1769, one year after the construction of Arkwright's model. But there was nothing new about this arrangement, as John Wyatt had used it in 1738. See Wyatt MSS., I, 45.

Arkwright's chief invention, to which he owed most of his wealth and fame, was not really his. As to the minor inventions, enumerated in the patent of 1775, if we are to believe the evidence of the many witnesses against him at the trial of 1785, he could not claim these either. According to them, the feeder had been invented in 1772 by the Quaker John Lees of Manchester,⁶⁶ the crank and comb was Hargreaves',⁶⁷ and the carding machine was almost identical with the one for which Daniel Bourne had taken out a patent in 1748.⁶⁸ As for the roving frame, its cylinders were borrowed from Highs' machine, and its conical box revolving on a vertical axis had been used by Benjamin Butler since 1759.⁶⁹ We can understand now why the 1775 specification had been drawn up in such vague terms, that it required the genius of a Watt to guess its meaning. Arkwright had only tried, as well as he could, to conceal his thefts. But the proceedings in June, 1785, made them manifest. After the brilliant pleading of Adair for Arkwright, and of Bearcroft for the Crown, the jury did not hesitate to condemn Arkwright, and to declare his patent to have lapsed and the action of his competitors to be right and proper.⁷⁰

This trial, together with the judgment, would have utterly crushed any other man than Arkwright. But he was not so easily daunted. Deprived of his patent, he was still the richest cotton spinner in England, and his factories were the most numerous, the most important and the best run. He went on developing his undertakings. In 1784, with David Dale,⁷¹ he founded the New Lanark spinning mills, which derived their power from the falls of the Clyde. He set up others at Wirksworth and Bakewell near Cromford, and he did not neglect the old ones, whose buildings he enlarged and whose plant he renewed. It was in Nottingham, which had witnessed the beginnings of his industrial career, that he first made use of the steam engine. Honours too became his portion. In 1786, Margaret Nicholson's outrage provided the occasion for Arkwright, at the head of a deputation of notables, to present the King with a congratulatory address, and he was knighted shortly after. The following year Sir Richard Arkwright was called on to fill the high office of Sheriff of the County of Derby.⁷² He died in 1792, leaving a capital of half a million. One of his factories, that at Bakewell, brought

⁶⁶ Evidence of Lees, Th. Hale and H. Marsland *Trial*, pp. 38-40.

⁶⁷ Evidence of Elizabeth and George Hargreaves, *Trial*, pp. 41-45. Evidence of Whittaker, pp. 45-48, contested by the author of the article on Hargreaves, in the *Dictionary of National Biography*. 'We know now that Arkwright was, as he claimed, the author of these improvements, about which Hargreaves was informed by one of Arkwright's workmen.' See E. Lipson, *History of the Woolen and Worsted Industries*, p. 151.

⁶⁸ Patent No. 628 (Jan. 20th, 1748).

⁶⁹ B. Woodcroft, *Brief Biographies of Inventors*, p. 11.

⁷⁰ *Trial*, pp. 107-87.

⁷¹ Robert Dale Owen, *Threading my Way*, pp. 7 and 13. D. Bremner, *The Industries of Scotland*, p. 280. David Dale, Robert Owen's father-in-law, is best known as a philanthropist.

⁷² R. Guest, *Compendious History*, p. 28.

his heirs in £20,000 a year.⁷³ These were big figures, in days when great millionaire manufacturers had not yet been heard of. Such a fortune, built up in so few years, such unprecedented success in a man risen from nothing, were enough to justify Arkwright in the eyes of his generation.⁷⁴

His success, in fact, best illustrates what he really achieved, and what his place in economic history should be. He was no inventor. At the most he arranged, combined and used the inventions of others, which he never scrupled to appropriate for his own ends. The praise once lavished on him by rash admirers, to-day seems slightly misplaced. It was plainly absurd to compare him either to Newton or to Napoleon,⁷⁵ and rather unfortunate to quote him in order to prove that capitalism is founded entirely on personal merit and on laborious honesty. Arkwright's real claim to fame lies in the fact that he was successful. He was the first who knew how to make something out of other men's inventions, and who built them up into an industrial system. In order to raise the necessary capital for his undertakings, in order to form and dissolve those partnerships which he used successively as instruments with which to make his fortune,⁷⁶ he must have displayed remarkable business ability, together with a curious mixture of cleverness, perseverance and daring. In order to set up large factories, to engage labour, to train it to a new kind of work, and to enforce strict discipline in the workshops, he needed an energy and an activity not often met with. These were qualities which most inventors never had, and without which their inventions could not have resulted in the building up of a new industrial system. It was Arkwright who, after the inconclusive or unsuccessful attempts of the brothers Lombe, of Wyatt and of Lewis Paul, really created the modern factory. He personified the new type of the great manufacturer, neither an engineer nor a merchant, but adding to the main characteristics of both, qualifications peculiar to himself: those of a founder of great concerns, an organizer of production, and a leader of men. Arkwright's career heralded a new social class and a new economic era.

His name will always be associated with the beginnings of the modern factory system. At the end of the eighteenth century all the factories in Lancashire and Derbyshire were built in imitation of his establish-

⁷³ *Gentleman's Magazine*, LXII, 771 (August, 1792), F Espinasse, *Lancashire Worthies*, I, 463-664

⁷⁴ See the evidence of Sir Robert Peel before the Commission of Enquiry of 1816. 'A man who has done more honour to the country than any man I know — I mean Sir Richard Arkwright.' *Report of the Minutes of Evidence taken before the Select Committee on the State of the Children employed in the Manufactories of the United Kingdom* (1816), p. 134. Peel had been one of Arkwright's opponents in 1785.

⁷⁵ A. Ure, *Philosophy of Manufactures*, pp. 16 and 252.

⁷⁶ 'Arkwright succeeded very unaccountably in finding fresh partnerships, though former ones were dissolved in consequence of their not answering, and he always came richer from the misfortune, like Anteus, who in his falls gained strength from his mother earth.' R. Guest, *Compendious History*, p. 20.

ments. ‘We all looked up to him,’ said Sir Robert Peel.⁷⁷ He knew it, and seemed deliberately to try and lead the way in hard work and limitless ambition. He worked ceaselessly all day and often part of the night.⁷⁸ He had to travel constantly, in order to supervise his many factories, and worked on the road in his post-chaise, drawn by four horses, which were always driven at top speed.⁷⁹ His plans for the future were boundless. He once said that, if he had the privilege of living long enough, his capital could one day repay the whole national debt.⁸⁰

IV

With Arkwright machine industry ceased to belong solely to the realms of technical history, and became an economic fact, in the widest sense of the word. Yet, even in the cotton industry, it was still far from having reached complete development. The main feature of the period we are describing was the very extensive use of the jenny,⁸¹ which did not make any great difference either to the organization of labour or to the life of the working people. On the other hand, no new improvements had been made in the loom since the invention of the fly shuttle, and it was therefore now the weaver who lagged behind the spinner. The two inventions which finally transformed the textile industry were those of Samuel Crompton and Edmund Cartwright.

Crompton’s ‘mule,’⁸² as its name suggests, was a compound machine; that is to say, it combined two principles, that of the jenny and that of the water frame. From the water frame it borrowed the rollers between which the thread was drawn, and from the jenny, the moving carriage which slid backwards and forwards. The spindles were fixed to it, and were thus given an alternating motion, first moving away, so as to stretch the thread after it had passed between the rollers, then moving back whilst they rotated rapidly on their own axis, and thus at the same time both twisting and winding the thread. The thread which the water frame produced was strong but rather coarse. The thread produced by the jenny was fine, but was too weak and broke too easily. The mule gave both strength and extreme fineness.⁸³

In many respects it was a final invention, for, in spite of modifications

⁷⁷ Report of the Minutes of Evidence . . . on the State of the Children employed in the Manufactories of the United Kingdom, p. 134

⁷⁸ When he was over fifty, he found two hours every day to improve his spelling and his grammar.

⁷⁹ F. Espinasse, *Lancashire Worthies*, I, 467.

⁸⁰ Id., *ibid.*

⁸¹ ‘The yarn or twist for warps was spun from cotton in the water-frame factories, whilst the weft was spun by the families of the weavers on the jenny.’ R. Guest, *Compendious History*, p. 17.

⁸² Or mule jenny.

⁸³ In 1792 John Pollard of Manchester was able, with the aid of the mule, to turn a pound of raw cotton into 278 hanks of yarn with a total length of about 212,000 yards. *Edinburgh Review*, XLVI, 18

due to the various needs of the different textile industries, and to the development of engineering knowledge, its main characteristics are still to be found in the delicate and complicated machinery of the most up-to-date type.

The inventor of the mule, Samuel Crompton, belonged to a Lancashire family of small landowners.⁸⁴ The old house near Bolton, where he was brought up and where he worked at his invention between 1774 and 1779, can still be seen, and has now been transformed into a museum. It is a fine building with gables, high chimneys and mullioned windows, which reminds the visitor of the prosperous days of an extinct class.⁸⁵ In Crompton's time, the smaller yeomanry was becoming more and more divorced from the land. His father was still a farmer as well as a spinner and a weaver, but Crompton himself never did any agricultural work. Had he an opportunity of seeing and studying the water frame, or did he reinvent it as Highs did with Wyatt's invention?⁸⁶ In any case, he knew Arkwright personally, for he had met him when Arkwright was still a barber at Bolton.⁸⁷ As for the jenny, he had often used it, and it was in order to improve it that he began his researches.⁸⁸

Unlike Arkwright, he had not worked out in advance the profits his invention would bring him. For some time he only used the machine himself, in the little workshop where he was at once engineer, workman and employer. But the extreme fineness of his thread attracted the attention of the neighbouring manufacturers. He at once became the object of much curiosity, mingled with a great deal of jealousy and covetousness. Ladders were used to peep in at his windows and holes were bored in his walls.⁸⁹ He realized that he would not be able to keep his secret very much longer. He had no patent and perhaps would have found it difficult to take one out, as part of his invention was simply an adaptation of the water frame, and Arkwright was still in possession of his patent rights: 'I was under the necessity of making it public or destroying it, as it was not in my power to keep it and work it, and to destroy it was too painful a task, having been four and a half years, at least, wherein every moment of time and power of mind, as well as expense, which my other employment would permit, were devoted to

⁸⁴ 'His father held a farm of small extent, and, as was customary in those days, employed a portion of his time in weaving, carding and spinning.' *Brief Memoir of Samuel Crompton*, in *Mem of the Literary and Philosophical Society of Manchester*, Series II, Vol V, p 319.

⁸⁵ G French, *Life and Times of Samuel Crompton*, pp 27, 43, 48, 51, B Woodcroft, *Brief Biographies of Inventors*, p 13. The popular name of Crompton's house was 'The Hall i' th' Wood' (Drawing in G. W. Daniels, *The Early English Cotton Manufacture*, p 115).

⁸⁶ This is asserted by Kennedy, *Brief Memoir of Samuel Crompton*, pp 325-26. But the terms of the petition of Mar 5th, 1812 (*Journals of the House of Commons*, LXVII, 175) do not tally with this hypothesis. Crompton was evidently acquainted with the water frame, since he said he had invented the mule to remedy the defects of that machine, which was 'utterly incapable of spinning weft of any kind, or of producing twist of very fine texture.'

⁸⁷ French, *Life and Times of Samuel Crompton*, p. 46.

⁸⁸ He was born in 1753. In 1779, the date of the invention, he was, therefore, 26 years old.

⁸⁹ B. Woodcroft, *Brief Biographies of Inventors*, p. 15, French, *Life and Times of Samuel Crompton*, p 77.

this one end, the having good yarn to weave: so that destroy it I could not.⁹⁰ He preferred to make a present of it to the public. The manufacturers had promised him a voluntary subscription as compensation, and the subscription was actually made, its total amount being £67 6s. 6d.⁹¹ But some of the subscribers, once they had got hold of the model, did not feel bound to keep their word.

After this experience of the generosity and good faith of his neighbours, it is hardly surprising that Crompton should have become discouraged and misanthropic. A few years later he invented a carding machine, but it was hardly finished before he smashed it to pieces, exclaiming, 'They shall not have this too.'⁹² Being a poor man, with very little talent for business, he was doomed to disappointment. He succeeded in setting up a little spinning mill, first at Oldham near Bolton, and then, in 1791, in Bolton itself. But the manufacturers, fearing his competition, enticed away his best workmen,⁹³ one of them, Robert Peel, once offered to take him into partnership, but was refused.⁹⁴ In 1802, a new subscription list was opened for him and produced about £500.⁹⁵ Finally, in 1812, his friends persuaded him to apply to Parliament for a grant, such as had often been awarded to less deserving persons. The support of the Prince Regent had been solicited, and Parliament granted Crompton £5,000,⁹⁶ most of which he spent in paying his debts, for he died poor.

Crompton was a man of remarkable intelligence and some culture,⁹⁷ probably much above most of those who profited by his invention. But he was unable to reap any benefit from it. His very independent character, combined with a modesty which almost amounted to shyness, were not qualities which made for success: and he lacked some other qualities, such as the gift of organization and of leadership. The contrast between his life and that of Arkwright shows the difference there is between original research and discovery, and their clever adaptation to practical ends. In the South Kensington Museum the portraits of the two men hang side by side. Arkwright, with his fat vulgar face,

⁹⁰ Letter from Crompton, quoted by E. Baines, *History of the Palatine County and Duchy of Lancaster*, II, 453.

⁹¹ This is the figure given by French, p. 85, and by the *Dictionary of National Biography*, XIII, 149. Woodcroft, *op. cit.*, p. 15, and Kennedy, *op. cit.*, p. 320, give £106 and £50 respectively.

⁹² French, *op. cit.*, p. 106.

⁹³ B. Woodcroft, *op. cit.*, p. 16.

⁹⁴ 'Cotton Spinning Machines and their Inventors,' *Quarterly Review*, CVII, pp. 70-1.

⁹⁵ Kennedy, *op. cit.*, p. 321, and *Journals of the House of Commons*, LXVII, p. 838.

⁹⁶ The petition was brought in on March 5th, 1812, and the Bill passed on March 25th. *Journals of the House of Commons*, LXVII, 175 and 476. See G. W. Daniels, *Early English Cotton Manufacture*, pp. 155-58.

⁹⁷ Mr Daniels, after studying Crompton's original correspondence, has been led to the same appreciation: 'Crompton can only be regarded as a working man, but that he had fully utilized his limited opportunities of education, his letters and other attainments show.' *Early English Cotton Manufacture*, p. 148.

his goggling heavy-lidded eyes, whose expressionless placidity is belied by the vigorous line of the brow and the slight smile on the sensual and cunning lips, is the matter-of-fact business man, who knows how to grasp and master a situation without too many qualms of conscience. Crompton, with his refined and emaciated profile, his fine forehead, from which his brown hair is tossed back, the austere line of his mouth and his large eyes, both enthusiastic and sad, combines the features of Bonaparte in his younger days with the expression of a Methodist preacher. Together they represent invention and industry, the genius which creates revolutions and the power which possesses itself of their results.

Like the jenny, the mule was at first made of wood, and its small size made it suitable for use in cottages. About 1783 larger ones were made, with metal rollers and wheels.⁹⁸ In 1790, a Scotch manufacturer called William Kelly made automatic mules, set in motion by a water-wheel like Arkwright's machine, and fitted with as many as three or four hundred spindles.⁹⁹ From that time forward the mule became the spinning machine *par excellence*, and took the place, in current use, of Hargreaves' jenny. In 1812, before presenting his petition to Parliament, Crompton, in order to collect information on the success of his invention and the importance of the interests it had created, visited the chief centres of the textile industry, and noted that the mule was used in many hundreds of factories, with a total of four or five million spindles.¹⁰⁰ The jenny, which twenty years before had been so popular, now only played a comparatively unimportant part in the industry as a whole. And with the jenny the last remains of the old cottage system finally disappeared from the cotton-spinning industry, which had become the most flourishing industry in England.

Not only was spinning transformed by Crompton's invention, but its consequences were felt in weaving as well. The water frame had made it possible to weave calicoes in England, while previously they had to be imported from India. The mule, thanks to the extreme fineness of the thread it produced, enabled British manufacturers to outdo the renowned skill of the Indian workers, and to manufacture muslins of incomparable delicacy.¹⁰¹ This was a new industry, whose centres were Bolton in Lancashire, and Glasgow and Paisley in Scotland.¹⁰² By 1783,

⁹⁸ Kennedy, *op. cit.*, pp. 329-30.

⁹⁹ Id., *ibid.*, pp. 337 and foll., Ed. Baines, *History of the Cotton Manufacture*, p. 203, mentions as one of the authors of this improvement William Strutt, son of Jedediah Strutt.

¹⁰⁰ Kennedy, *ibid.*, p. 322, B. Woodcroft, *Brief Biographies of Inventors*, p. 19.

¹⁰¹ Crompton in his petition of 1812 points out this advantage, due to the use of his mule. See *Journals of the House of Commons*, LXVII, 175.

¹⁰² Macpherson, *Annals of Commerce*, IV, 80; *A Complete History of the Cotton Trade*, p. 102; J. Aikin, *A Description of the Country from Thirty to Forty Miles round Manchester*, p. 166, R. Guest, *Compendious History*, p. 31.

it occupied a million looms in Glasgow alone,¹⁰³ and in 1785 the output of muslins in Great Britain was estimated to be about fifty thousand pieces.¹⁰⁴ As was observed by the author of a contemporary pamphlet, the muslin industry 'is of the greatest importance from a national point of view, because the whole process consists of labour alone, in many instances performed by women and children, and the value of the raw material applied to this article is generally increased from 1,000 to 5,000 per cent.'¹⁰⁵

V

Meanwhile the unequal speed of industrial processes, which had, once already, set in motion technical progress, was again making itself manifest. While spinning was now done by machinery, weaving was still done by hand. About 1760 weavers found it difficult to get enough thread to keep themselves in constant employment. Thirty years later the opposite was the case: there was a scarcity of weavers and their wages rose rapidly. Those who wove fancy muslins at Bolton were paid, in 1792, as much as 3s. or 3s. 6d. a yard, while the weavers of cotton velveteen earned 35s. a week.¹⁰⁶ So they gave themselves great airs, and could be seen parading about the streets, swinging their canes, and with £5 notes ostentatiously stuck in their hatbands. They dressed like the middle class and would not admit workmen of other trades to the public houses they patronized¹⁰⁷ It is true that their prosperity was short lived. In 1793 the general industrial crisis in England caused a drop in wages.¹⁰⁸ But this only changed the aspect of the problem. The disproportion between the output of spun yarn and of material became so great that spinners were forced to export.¹⁰⁹ This exportation gave rise to some

¹⁰³ Among the Glasgow muslin manufacturers, a certain number were merchants or ship-owners, who had gone into industry during the war with America. See *La Rochefoucauld Liancourt, Voyage aux Montagnes*, Vol. II, letter dated May 8th, 1786

¹⁰⁴ Anderson, *Chronological History and Deduction of the Origin of Commerce* (Supplement), IV, 655.

¹⁰⁵ *An Important Crisis in the Calico and Muslin Manufacture of Great Britain*, p. 9.

¹⁰⁶ *Fifth Report from the Select Committee on Artizans and Machinery*, p. 392 (1824), *Minutes of the Evidence taken before the Select Committee appointed to report upon the Condition of the Hand Loom Weavers*, p. 389 (1835).

¹⁰⁷ Place MSS (British Museum, Add MSS 27828), p. 199.

¹⁰⁸ Price of weaving muslins at Bolton per yard.

1792	3s. 0d.	1797	1s. 6d
1793	2s. 0d	1798	1s. 3d
1794	1s. 9d.	1799	1s. 2d

This drop was mostly due to the rapid increase in the number of weavers attracted by the high wages *Fifth Report from the Select Committee on Artizans and Machinery*, p. 392

¹⁰⁹ 'The demand for cotton cloth was equal, during this period, to take off the whole produce of the spindle, if weavers could have been found to weave it into cloth, but, this being impossible, the spinners began to export the surplus to the manufacturers abroad.' *Report on Dr. Cartwright's Petition* (1808), p. 7. This exportation made it possible to keep down the wages of weavers at home, in spite of a great demand for labour. 'About 1800, there was not a village within thirty miles of Manchester, on the Cheshire and Derbyshire side, in which some of us were not putting out cotton warps, and taking in goods, employing all the weavers of woollen and linen goods who were declining those fabrics as the cotton trade increased; in short, we employed every person in weaving who could be induced to learn the trade.' W. Radcliffe, *Origin of the new System of Manufacture*, p. 11.

alarm, as many people feared that a weaving industry, supplied by English cotton thread, might be set up in neighbouring countries, particularly France. A vigorous campaign was conducted against the export of cotton thread, and there was even some talk of prohibiting it altogether, for the same reason as the export of wool.¹¹⁰

Just as in the period before the spinning machines were invented, great discomfort was experienced in the whole textile industry. It became worse as the disproportion between the two branches of the industry increased, and reached its height in 1800. By then the remedy had already been known for several years, but its effect was not felt as yet, nor was it seriously applied until the need for the invention had reached its highest point. In this way the interplay of economic needs and technical inventions produced a succession of oscillations within the industry, each one of which marked a step forward.

Power loom weaving was a problem which had already tempted many investigators. The difficulty seemed great, but not insuperable. The motions of the two frames on which the warp was stretched, and the shuttle which passed between them to form the woof, were fairly simple problems. In England and Germany, as early as the seventeenth century, a power loom was used for the weaving of ribbons.¹¹¹ A crank drove the shuttle backwards and forwards, while a system of counter weights stretched and tightened the threads.¹¹² But the process was slow and complicated, and even if steps had not been taken in various countries, at the request of the weavers, to prohibit its use,¹¹³ the 'Dutch loom,' as it was called,¹¹⁴ would never have revolutionized the textile industry.

The same can be said of the loom made in 1678 by de Gennes, a Frenchman, in which two horizontal shafts passed the shuttle from one to the other side of the loom.¹¹⁵ As for the one made by Vaucanson (the model of which is at the Conservatoire des Arts et Métiers in Paris), its main interest¹¹⁶ lies in the fact that, half a century after it was invented, it served as a starting point for Jacquart's researches.

¹¹⁰ W. Radcliffe, *op. cit.*, pp. 78-84, 163-72, etc. Radcliffe was one of the leaders of this movement in Lancashire. On the discussions on this subject in the Manchester Chamber of Commerce, see E. Helm, *Chapters in the History of the Manchester Chamber of Commerce*, pp. 17 and foll.

¹¹¹ The invention has been attributed to one Anton Muller, who lived at Dantzig at the end of the sixteenth century. See Beckmann, *Beiträge zur Geschichte der Erfindungen*, II, 527.

¹¹² See the description of the ribbon-weaving loom in the *Encyclopédie Méthodique*, 'Manufactures,' ccii sqq., and in its *Recueil de Planches*, VI, 72 sqq. Also in A. Barlow, *History and Principles of Weaving*, pp. 217-27 (with plates).

¹¹³ In Germany there had been regular riots against this machine. See K. Marx, *Das Kapital*, I, 438.

¹¹⁴ It was also called swivel loom.

¹¹⁵ See *Journal des Savants*, year 1688, No. XXVII; *Philosophical Transactions of the Royal Society*, XII, 1001 and foll., and *Abridgments of Specifications relating to Weaving*, Introd., p. xxxv.

¹¹⁶ It is not even mentioned in the article on Silk in the *Encyclopédie Méthodique*.

None of these inventions was of any practical value.¹¹⁷ If, in France or England, power loom weaving shops had existed, they must have disappeared almost at once, for it is very difficult to find any traces of them.¹¹⁸ At any rate, it is fairly certain that Edmund Cartwright, the inventor of the power loom, knew nothing of them. The youngest son of a Nottingham gentleman, and early destined for the Church, he had done brilliantly at Oxford, and in 1764 had been made a fellow of Magdalen.¹¹⁹ For a long time he thought of nothing but literature. He even produced, in Pope's style, some verse whose chilly elegance was not entirely devoid of distinction.¹²⁰ When he left Oxford for a country living,¹²¹ being an intelligent and active man, he took a keen interest in the condition of the rural population amongst whom he lived. He studied medicine and agriculture, and instructed his parishioners in the newest remedies for fever and the latest methods of cultivation.¹²² In this way he first showed that enterprising spirit which was to transform a classical scholar lost in a country vicarage into an inventor and a manufacturer.

In the course of a chance conversation, whilst on a holiday at Matlock, Cartwright's attention was directed to the cotton industry, and the crisis with which it was threatened. He relates how he 'fell in company with some gentlemen of Manchester, when the conversation turned on Arkwright's spinning machinery. One of the company observed that as soon as Arkwright's patent expired, so many mills would be erected, and so much cotton spun, that hands never could be found to weave it. To this observation I replied, that Arkwright must set his wits to work and invent a weaving mill. This brought on a conversation on the subject, in which the Manchester gentlemen unani-

¹¹⁷ R. Guest, *Compendious History*, p. 44, mentions the establishment created by Garside at Manchester in 1765. The failure of that undertaking was due to the fact that the use of defective machines resulted in an increase rather than in a reduction of expenses. See J. James, *History of the Worsted Manufacture*, p. 351.

¹¹⁸ John Kay, the inventor of the fly-shuttle, took out a patent for a weaving machine in 1745, but it does not appear that his efforts in this direction had any material consequence. Espinasse, *Lancashire Worthies*, pp. 310-18.

¹¹⁹ *Memoir of Dr. Cartwright*, pp. 7-12. His family had lived in Nottinghamshire for three hundred years. Of his three brothers, two served with distinction in the army, and the third was a member of Parliament, where he became famous for his advanced opinions. E Halévy considers him to be the founder of English radicalism (*La Formation du Radicalisme Philosophique*, I, 223-24).

¹²⁰ *Constantia* (1768), *Almine and Elvira* (1775), *The Prince of Peace, with other Poems* (1779), *Sonnets to Eminent Men* (1783). 'Mr. Cartwright was once Professor of Poetry at Oxford, and really was a good poet himself. But it seems that he has left the barren mountains of Parnassus and the fountain of Helicon for other mountains and other vales and streams in Yorkshire, and he has left them to work in the wild, large and open fields of mechanics.' Letter from S. Salte (a cotton-goods merchant in London) to S. Oldknow, Nov. 5th, 1787, G. Unwin, *Samuel Oldknow and the Arkwrights*, p. 99.

¹²¹ First at Brompton in Derbyshire, and then at Goadby Marwood in Leicestershire.

¹²² *Memoir of Dr. Cartwright*, p. 18; J. Burnley, *Wool and Woolcombing*, p. 110; B. Woodcroft, *Brief Biographies of Inventors*, p. 21.

mously agreed, that the thing was impracticable.¹²³ Cartwright disagreed, and undertook to prove his case.

His first efforts were very clumsy. He knew nothing of mechanics and had never even seen a weaver at work. Nevertheless, with the help of a carpenter and a blacksmith he succeeded in fitting up a loom which worked somehow: 'The warp was placed perpendicularly, the reed fell with a force of at least half a hundredweight, and the springs which threw the shuttle were strong enough to have thrown a Congreve rocket. In short, it required the strength of two powerful men to work the machine at a slow rate, and only for a short time.'¹²⁴ This was the invention which Cartwright patented in 1785.¹²⁵ He at once realized how much was still needed to render it really useful. By successive improvements he produced a machine which was easily worked, stopped automatically every time a thread broke, and could be used, with a few modifications, to weave any kind of material.¹²⁶ What remained to be done was to bring it into general use in the industry, which seemed to be waiting and crying out for it, and Cartwright had no doubt but that he would be immediately successful.

Then his troubles began. He had money¹²⁷ and wanted to work his invention himself. So in 1787 he set up a small factory at Doncaster. There were twenty looms, eight for weaving calicoes, ten for muslins, one for cotton checks and one for coarse linen.¹²⁸ As in the early spinning mills, the motor power was at first supplied by animals, but in 1789 Cartwright introduced a steam engine from Birmingham. Unfortunately, though well equipped, the factory was badly run, for Cartwright had not, and never acquired, a business capacity.¹²⁹ It was the same melancholy story, true of most inventors, told over again. In 1791 he thought he had found the road to fortune, for he came to an agreement with some Manchester spinners, the brothers Grimshaw. They were to set up a big factory which was to contain no fewer than four hundred looms, worked by steam. Large buildings were put up for the purpose.¹³⁰ But the first machine had hardly been fitted when the weavers' violent

¹²³ *Encyclopaedia Britannica*, 1st ed., art. 'Cotton' (reprod. in the IXth Ed., VI, 500). See W. Radcliffe, *Origin of Power Loom Weaving*, p. 52.

¹²⁴ *Encycl. Britannica*, loc. cit.; *Memoirs of Dr. Cartwright*, pp. 63-64.

¹²⁵ *Abridgments of Specifications relating to Weaving*, No. 1470, April 4th, 1785.

¹²⁶ Patents No. 1565 (Oct. 30th, 1786), No. 1616 (Aug. 1st, 1787), No. 1676 (Nov. 12th, 1788).

¹²⁷ 'A very ample fortune.' Petition of Edmund Cartwright, clerk, D.D., Feb. 24th, 1809. *Journals of the House of Commons*, LXIV, 97.

¹²⁸ *Memoir of Dr. Cartwright*, p. 77; J. Burnley, *Wool and Woolcambing*, p. 112.

¹²⁹ He also suffered from his lack of an early training in practical mechanics 'Cartwright's loom proved of little service, and was of value principally as a starting point for other inventors. . . . It was not until the machine had been taken in hand by actual mechanics and weavers that any satisfactory progress was made' 'Cotton-spinning Machines and their Inventors,' *Quarterly Review*, CVII, p. 78.

¹³⁰ These buildings were known as Knott Mills. See Barlow, *History of Weaving*, pp. 40 and 236; Wheeler, *Manchester*, p. 167.

hostility broke loose. The owners received threatening letters,¹³¹ and a month later the whole place was burnt to the ground. Not only did Cartwright lose all profits from his contract with the brothers Grimshaw, but after that no one was found bold enough to be willing to renew the experiment.¹³²

Between 1792 and 1800, the power loom was both necessary and unpopular. It could not force itself into general use, because it was as much opposed as it was wanted, and because the fall in wages had made the demand for mechanical weaving less urgent. Cartwright, completely ruined and forced to hand his patents over to trustees, was struggling with merciless creditors and dishonest debtors.¹³³ He brought a series of actions against those who were trying to deprive him of the profits of his second invention, a machine for combing wool. But the force of necessity was at work, bringing final success. It first began in Scotland, where, in 1793, James Lewis Robertson set up in Glasgow two power looms, the power being supplied by a Newfoundland dog;¹³⁴ a year later a workshop fitted with forty power looms was opened at Dumbarton; and in 1801 John Monteith, renewing the efforts of the Grimshaw brothers, set up in one factory two hundred looms worked by steam.¹³⁵ The campaign against the export of spun yarn hastened this tardy development. In 1803 Horrocks of Stockport produced some power looms made entirely of metal, which shortly after were in use in several Lancashire towns.¹³⁶ For Cartwright it was 'an agreeable surprise' to see the resurrection, if not the final triumph, of his invention. When in 1809, three years before Crompton, he petitioned Parliament for a grant, he was able, in support of his request, to point out that his machines 'were now in such use in the county of Lancaster alone as to be considered of great national importance.'¹³⁷

A full study of the consequences of Cartwright's invention would take us far beyond the limits of the present book. It would include the history of power loom weaving as far as 1839, the date of the famous

¹³¹ Here is the text of one of these letters, dated March, 1792: 'We have sworn together to destroy your factory, if we die for it, and to have your lives for ruining our trade, and if you go on, you know the certainty.' *Report on Dr Cartwright's Petition* (1808), p. 4.

¹³² See petition of Feb. 24th, 1809, *Journals of the House of Commons*, LXIV, 97.

¹³³ Inquiry into the Petition of Mar 18th, 1801, *Journals of the House of Commons*, LVI, pp. 271-72 (John Cartwright's evidence)

¹³⁴ We must also mention the efforts of Robert Miller and of Andrew Kinloch (1793). Webb MSS, 'Textiles,' V, 1.

¹³⁵ R. Guest, *Compendious History*, p. 46, E Baines, *History of the Cotton Manufacture in Great Britain*, p. 231.

¹³⁶ Hardwick, *History of the Borough of Preston*, p. 375. On the improvements introduced by Peter Marsland and Miller of Glasgow, see Wheeler, *Manchester*, p. 107, and 'Cotton Spinning Machines and their Inventors,' *Quarterly Review*, CVII, 78

¹³⁷ *Journals of the House of Commons*, LXIV, 97. On June 7th the petition was referred to the Supplies Committee (*ibid.*, p. 391) which on June 8th granted Cartwright £10,000 (*ibid.*, p. 393). Cartwright's misadventures had not made him a man hater like Crompton. With his £10,000 grant he bought a farm in Kent and occupied the last years of his life with experiments in agriculture, chemistry and mechanics. See E Lipson, *History of the Woollen and Worsted Industries*, p. 168.

report of the Royal Commission on the condition of hand loom weavers.¹³⁸ This report, together with the evidence given before the Commission, illustrates both the growth of machine industry in this branch of the textile trade, and the causes owing to which its final triumph was delayed. The appalling misery of the weavers who, in 1839, still used hand looms, had become worse and worse as the grinding competition of machinery increased. But the worse it became, the more it delayed the universal use of the new equipment, for wages sunk so low that it paid better to use men than machines. More recently a repetition of the same phenomena has been witnessed in certain industries which have not been completely transformed by the industrial revolution. There lies the explanation of the survival of a belated technique in small domestic workshops, the last home of the sweating system. But the obstacles which machinery raised against its own progress could never be anything more than temporary.

At the beginning of the nineteenth century, the development of power loom weaving had hardly begun. Against the several million spindles already at work in the spinning mills, there were in all England no more than a few hundred power looms.¹³⁹ But the results were plainly visible. Two steam looms, looked after by a fifteen-year-old boy, could weave three and a half pieces of material, while in the same time a skilled weaver, using the fly shuttle, wove only one.¹⁴⁰ Even though the textile industry had not yet found that organic balance, which successive inventions had for sixty years sought to restore, the problem was now solved. We have seen how the equipment of the spinning mills gradually grew up, like the interdependent organs of a living body. Before Cartwright's invention the system was still incomplete. Now all the essentials were there, and in that particular branch of production the triumph of machine industry was an accomplished fact.

Machinery now not only seized on and changed the fundamental processes of industry, but made its way into all details and special operations. Up till that time materials had been printed by means of plates engraved in relief, which were stamped by hand on linen or calico, as many times over as was necessary¹⁴¹—a slow and expensive process. Materials printed in the roughest way, and showing the simplest patterns in crude colours (a geometrical design, a leaf, or an arabesque) were sold in 1780 at 3s. or 3s 6d. a yard.¹⁴² But in 1783, Thomas Bell,

¹³⁸ *Minutes and Reports from H.M.'s Commissioners and Assistant Commissioners on the Condition of the Hand Loom Weavers* (1839–41).

¹³⁹ R. W. Cooke-Taylor, *The Modern Factory System*, p. 94, gives the following figures in 1813, 1,000 steam looms, in 1820, 14,000, in 1829, 60,000, in 1833, over 100,000. According to S. Chapman, *Lancashire Cotton Industry*, p. 28, the number of power looms in the country in 1813 amounted to 2,400, part of them being probably worked by water power.

¹⁴⁰ See R. Guest, *Compendious History*, pp. 47–48.

¹⁴¹ In order to print 28 yards of linen, the plate, which was 10 inches long by 5 inches broad, had to be applied nearly 450 times. Townsend Warner, in *Social England*, V, 471–72.

¹⁴² See *The Calico Printer's Assistant* (1790).

a Scotchman, replaced the plates, so laboriously applied by hand, by copper cylinders, and one revolving press could do the work of a hundred workmen.¹⁴³ In Lancashire, large calico-printing works were erected. Meanwhile the bleaching and dyeing industries were reaping the benefits of scientific progress. Berthollet's discovery of the bleaching properties of chlorine dates from 1785,¹⁴⁴ and was almost immediately taken up by James Watt, who made it known in England.¹⁴⁵ Its use in industry was realized some years later by Tennant of Glasgow,¹⁴⁶ and in a few years the process was universally adopted: the sight of pieces of stuff spread out in the open air for months together, and, if looked at from a distance, glittering in the sun like ponds, round all weaving villages, now vanished for ever. About the same time Taylor of Manchester re-discovered the secret of Oriental dyes, and produced 'Turkey reds,' which soon became as popular as Indian prints.¹⁴⁷ Velveteen made its appearance, owing to John Wilson of Ainsworth.¹⁴⁸ A complete description of all these secondary improvements would cover many pages.¹⁴⁹

But, far from bringing the evolution to an end, they only extended its scope. The effect of each fresh invention was to tighten the bond between all the various technical processes, and the more dependent they became on one another, the more did any improvement in one have an immediate and profound effect on all the others. Thus their common development, that contagious and incessant progress which, more than any static quality, marks the factory system, was determined and quickened.

VI

Even though the cotton industry developed so quickly, we can distinguish several different stages. The first is the period immediately following on Hargreaves' invention. Between 1775 and 1785 a fever

¹⁴³ There had been others before Bell, as early as 1764 or 1765. See *Gentleman's Magazine*, XXXV, 439 (1755). In 1785 his machine was introduced into Lancashire, Wheeler, *Manchester*, p. 169.

¹⁴⁴ 'Description du blanchiment des toiles par l'acide muriatique oxygéné,' *Annales de Chimie*, II, 151, VI, 204 sq. 'Action de l'acide muriatique oxygéné sur les matières colorantes,' *ibid.*, VI, 210.

¹⁴⁵ On the relations of James Watt with French and English chemists, Berthollet, Black, Priestley, etc., see S. Smiles, *Lives of Boulton and Watt*, pp. 141-42. The same year (1786) the Literary and Philosophical Society of Manchester in its *Memoirs* (III, 343 and foll.) published Th. Henry's essay on 'The Theory of Dyes.' The Soho Manuscripts contain a letter from Watt to Berthollet (Feb. 25th, 1787) of which the beginning is in French 'Monsieur—L'accumulation des affaires, suite nécessaire de notre longue absence de chez nous, m'a empêché jusqu'à présent de me prêter à votre affaire de blanchiment, mais je n'ai pas oublié cette importante affaire, ni non plus nos promesses de vous aider tant qu'il nous serait possible.'

¹⁴⁶ E. Baines, *History of the Cotton Manufacture*, p. 249

¹⁴⁷ Note on Charles Taylor in the papers of the Owen Collection, LXXX, 74, Manchester Central Free Library.

¹⁴⁸ *A Complete History of the Cotton Trade*, pp. 71-3.

¹⁴⁹ Special mention should be made of an American invention, the *cotton gin* (1793), the use of which speeded up considerably the preparation of the raw material for industrial treatment. On the cotton gin and its inventor, Elias Whitney, see M. B. Hammond, *The Cotton Industry, an Essay in American Economic History*, I, 25-31.

of production seized on certain districts. While thousands of jennies were at work in the cottages, the number of weavers and looms increased enormously, without being able to cope with the work. 'The old loom shops being insufficient, every lumber room, even old barns, cart houses and outbuildings of any description, were repaired, windows broke through the old blank walls, and all fitted up for loom shops. This source of making room being at length exhausted, new weavers' cottages with loom shops rose up in every direction, all immediately filled . . .'¹⁵⁰ There were still very few factories, for capitalistic organization had not yet taken on the shape which was soon to make it conspicuous. At least in appearance, that was the golden age of domestic industry.

The second period began with that memorable trial which ended in the cancelling of Arkwright's patent.¹⁵¹ From that moment factories became general throughout the textile industry. The use of highly complicated and delicate machinery, which took up a great deal of room and was very expensive, was incompatible with cottage industry. But until then, in spite of its obvious advantages from the point of view of organization and supervision, the bringing together of many workmen in large workshops had never been in general use. In short, the system of 'manufacture', if by that term we mean a system of production which really prevailed at any given time, never existed in England at all. The factory system, on the other hand, was the necessary outcome of the use of machinery. Plant which consisted of many interdependent parts, and which was worked from one central power station, could only be set up in one main building, where it could be supervised by a disciplined staff. This building was the factory, which admits of no other definition.¹⁵²

The first spinning mills, compared with the great textile factories of the present day, would seem small indeed. Yet the labour they employed was fairly numerous: between a hundred and fifty and six hundred hands.¹⁵³ Apart from their gradual extension, the four- and five-storied brick buildings hardly changed at all during the following half-century.¹⁵⁴

¹⁵⁰ W. Radcliffe, *Origin of the New System of Manufacture, commonly called Power Loom Weaving*, p. 65.

¹⁵¹ On the impression in Lancashire made by the decree, see *Manchester Mercury* of June 28th, 1785 'The country is liberated from the dreadful effects of a monopoly in spinning,' etc. Prof. Unwin observes that the cancelling of Arkwright's patent was shortly followed by the publication of Crompton's invention, both together giving 'an immense stimulus to the manufacture of the finer cotton fabrics' (*Samuel Oldknow and the Arkwrights*, p. 2).

¹⁵² See *An Important Crisis in the Calico and Muslin Manufacture of Great Britain*, p. 4. According to this pamphlet (which, like many of the economic pamphlets of the eighteenth century, cannot be unreservedly relied upon) there were in 1788 in Great Britain, 143 spinning mills fitted with automatic equipment, 550 mules and 90 spindles, and 20,070 jennies of from 8 to 10 spindles.

¹⁵³ A spinning mill employing 600 workmen was opened at Manchester in 1780. See E. Butterworth, *History of Oldham*, p. 118.

¹⁵⁴ W. Fairbairn, *Mills and Millwork*, II, 113.

The main characteristic of that time was the use of water for motor power. Arkwright's machine, being worked by water, was usually described as 'the water frame.' We have mentioned above the typical site of the Cromford spinning mill, which possessed all the essential conditions of which a manufacturer had to make sure. This had an important consequence, for it meant that no factory could be established far from a stream powerful and swift enough to set the machines in motion. For this reason it was not in towns that the millowners at first established their factories, but near the hills, in narrow valleys where, by using dams, it was easy to create an artificial waterfall. The beginnings of the modern factory system are to be found in small hamlets, far removed from those great industrial centres round which the mass of the working population has since gathered. These small places were scattered along the foot of the Pennine range, on all three sides of it, on the west towards Manchester and the Irish Sea, on the south towards the Trent valley, and on the east towards the Yorkshire plain and the North Sea.

But this dispersion was only comparative. The cotton industry, which differed in this respect from the old woollen industry, tended to establish itself almost exclusively in two or three districts: in southern Lancashire, in the north of Derbyshire, and in the Clyde valley between Lanark and Paisley. The first of these districts was by far the most important, for in 1788 it contained more than forty spinning mills.¹⁵⁵ This was due to the abundant water power, for the high hills on the south-east run very steeply down to the low and marshy country which stretches right across to the coast. From time immemorial the Lancashire rivers have turned many wheels: at the beginning of the eighteenth century there were sixty mills established on the Mersey below Manchester within a distance of three miles.¹⁵⁶ Even though we can say that the geographical position and the climate, as well as the prosperity of the port of Liverpool, favoured the growth of the cotton industry in Lancashire, yet it is the existence of streams providing the necessary power, which explains why the earliest factories grew up round Blackburn, Bury, Bolton, Oldham and Manchester.¹⁵⁷ The same observation applies to the Derbyshire and Glasgow districts. It is, of course, true that this essential condition was found in many other districts as well. And indeed, between 1785 and 1800 factories were set up in a large number of counties. But these experiments, which were actuated by the success and the rapidly acquired fortunes of the

¹⁵⁵ *An Important Crisis in the Calico and Muslin Manufacture*, p 4

¹⁵⁶ See Stukeley, *Itinerarium Curiosum*, p 58.

¹⁵⁷ There were spinning mills at Bury from 1774, at Chorley from 1776, at Preston from 1777, at Oldham from 1778. See Ed Butterworth, *History of Oldham*, pp 117-18, Id., *History of Ashton-under-Lyne*, pp. 142-43.

Northern manufacturers, were not followed by extensive consequences.¹⁵⁸ Far from resulting in the spread of the cotton industry over the whole country, they only threw into relief its localization, which, as time went on, became ever more pronounced.

While its geographical concentration was only one of the external features of the new industrial system, an even more fundamental concentration was taking place within: the concentration of undertakings bound together by their common need for raw materials and markets, and that of capital, the importance of which grew with that of mechanical equipment. Each factory represented a capital of several thousand pounds,¹⁵⁹ and it was not uncommon for one man to own several. For instance, we know that Arkwright ran eight or ten at a time.¹⁶⁰ The second Peel employed almost the whole population of Bury in his spinning, dyeing and printing works, while the weaving was carried on by the cottagers in the neighbouring villages.¹⁶¹ He also owned other factories in over twelve different places¹⁶² In 1802 he employed more than fifteen thousand persons, and he paid into the Treasury £40,000 in excise duties.¹⁶³ At Stockport, Samuel Oldknow, a muslin manufacturer, was, toward the end of the century, popularly reputed to be earning £17,000

¹⁵⁸ The author of *An Important Crisis* gives the following table (1788).

England	Spinning Mills		Scotland	Spinning Mills	
	Lancashire	Derbyshire		Renfrew	Perthshire
Derbyshire	41	17	Lanark	4	3
Yorkshire	11		Perthshire		2
Cheshire	8		Midlothian	2	1
Staffordshire	7		Ayrshire	1	
Westmoreland	5		Galloway	1	
Flintshire	3		Annandale	1	
Berkshire	2		Bute	1	
Surrey	1		Aberdeenshire	1	
Hertfordshire	1		Fife	1	
Leicestershire	1				
Worcestershire	1				
Pembroke	1				
Gloucestershire	1				
Cumberland	1				

The spinning mills of Cheshire, Flintshire and Westmoreland can be regarded as part of the Lancashire group, while those of Staffordshire formed part of the Derbyshire group. *An Important Crisis in the Calico and Muslin Manufacture*, p 5.

¹⁵⁹ On that point Prof. Unwin warns us against contemporary exaggerations (*Samuel Oldknow and the Arkwrights*, p 115).

¹⁶⁰ Those at Nottingham, Cromford, Belper, Bakewell, Wirksworth, Derby, Chorley, Manchester and Lanark

¹⁶¹ 'Some of these are confined to the carding, slubbing, and spinning of cotton, others to washing the cottons with water wheels which go round with great velocity. . . Boiling and bleaching are performed in other works. In short, the extension of the whole concern is such as to find constant employment for most of the inhabitants of Bury and its neighbourhood, of both sexes and all ages, and notwithstanding their great number, they have never wanted work in the most unfavourable times' J Aikin, *A Description of the Country from Thirty to Forty Miles round Manchester*, p 521, Espinasse, *Lancashire Worthies*, I, 90-103.

¹⁶² At Bolton, Warrington, Manchester, Blackburn, Burnley, Walton, Stockport, Church-bank and Ramsbottom in Lancashire, at Bradford in Yorkshire, at Tamworth and Lichfield in Staffordshire, etc.

¹⁶³ W. Cooke-Taylor, *Life and Times of Sir Robert Peel*, I, 16.

a year.¹⁶⁴ Between 1793 and 1797 the Horrocks set up three factories in Preston alone.¹⁶⁵

The large amount of capital which was needed for such undertakings did not in each case belong to one individual. Joint capitalist enterprises increased, especially in the earlier period, before great individual fortunes had been made in industry. The reader no doubt remembers the numerous contracts which Arkwright so cleverly turned to good account in order to bring his various schemes to a successful conclusion. Peel, too, had several partners,¹⁶⁶ and his firm was commonly referred to as 'the Company of which that very respectable gentleman, Robert Peel, Esq., M.P. for Tamworth, is the head.'¹⁶⁷ It is important to note that in this case the word 'company' was not used in its usual sense of a joint-stock company. This form of organization had so far only been used in, and was only deemed suitable for, a few important banking, insurance or public works undertakings.¹⁶⁸ Adam Smith considered this as an unquestionable principle.¹⁶⁹ When in 1779 the question of starting a company for the manufacture of linens and printed calicoes was discussed,¹⁷⁰ the scheme was promptly allowed to drop. As in other industries, joint-stock enterprise only came into being at a much later period. Capitalism in its early days retained an essentially individual character. The employer was both the owner and the director of an industrial undertaking, and in his own person combined the powers and the prerogatives, which, in a joint-stock company would be divided between the shareholders on the one hand and the directors on the other.

In this way, through the introduction of machinery and the consequent concentration of the means of production, the hold of commercial

¹⁶⁴ On Samuel Oldknow, see Robert Owen, *Life, Written by Himself*, p. 40; W. Kennedy, *Brief Memoir of Samuel Crompton (Memoirs and Proceedings of the Literary and Philosophical Society of Manchester)*, Series II, V, 339, and the interesting book on *Samuel Oldknow and the Arkwrights*, written from original records, by Professor Unwin, with the assistance of A. Hulme and G. Taylor.

¹⁶⁵ Hardwick, *History of the Borough of Preston*, p. 366

¹⁶⁶ See Wheeler, *Manchester*, p. 529.

¹⁶⁷ J. Aikin, *loc. cit.*

¹⁶⁸ See G. Schmoller, *Die geschichtliche Entwicklung der Unternehmung (Jahrbuch für Gesetzgebung, Verwaltung und Volkswirtschaft*, 1893).

¹⁶⁹ 'The only trades which it seems possible for a joint-stock company to carry on successfully, without an exclusive privilege, are those in which all the operations are capable of being reduced to what is called a routine, or to such a uniformity of method as admits of little or no variation. Of this kind is, first, the banking trade, secondly, the trade of insurance from fire and from sea risks, and capture in time of war, thirdly, the trade of making and maintaining a navigable cut or canal; and, fourthly, the similar trade of bringing water for the supply of a great city.' Adam Smith, *Wealth of Nations*, Book V, chap. I. On the failure of several industrial companies founded in the eighteenth century, see Cunningham, *Growth of English Industry and Commerce* (3rd ed.), II, 519.

¹⁷⁰ Petition to the House of Commons, *Journals of the House of Commons*, XXXVII, 108. We must also note the scheme described in a pamphlet of 1798, 'The Outlines of a Plan for establishing a United Company of British Manufacturers.' The plan was an extremely ambitious, not to say a chimerical one: the author conceived a great federation of all industries, partaking of the joint-stock company and of the *Neus from Nowhere* community, with the workers housed, and paid in subsistence tickets and a share of social capital, a scientific office for the organization of production, etc.

capital was riveted on industry, and the manufacturer in the modern sense of the word took the place of the merchant-manufacturer. Between the two extremities of this rapid evolution there lay a whole series of intermediate stages. Sometimes the fustian master would merely gather together in one workshop a certain number of hand machines. This was the 'spinning room,' which belongs more to the stage of 'manufacture' than to that of the modern factory.¹⁷¹ Sometimes the raw material and the plant were owned by different people. Small spinning mills received the raw cotton from the merchants, and returned it to them in the shape of yarn,¹⁷² and thus the two successive systems of production formed a temporary alliance, the factory merely carrying out the tasks formerly entrusted to home workers. So long as hand and power loom weaving existed side by side, part of the industry was bound to remain subject to those conditions which had in the beginning ruled the whole industry; but great weaving establishments, which often belonged to owners of spinning mills, competed in many places with the cottage industry.¹⁷³ And, lastly, it must not be forgotten that, from 1780 onwards, the mule, which replaced the jenny and was, like it, adapted for use in the cottages, spread throughout the country, and thus, for some time still, kept the domestic system of production alive. In the cotton materials which were produced about that time, the warp, spun on a water-frame, was usually made in a factory, whilst the woof was spun on a mule in a cottage.¹⁷⁴ In this way we see how the old and the new methods of industry crossed and intercrossed, so closely were they bound up with one another.

It was during this decisive period that the main lines of the factory system were laid down. By the time when, in the following period, steam came into general use, the factory system was fully grown, and it was altered by this new invention very much less than we might be led to suppose. Now that, after long neglect, man is again turning to account natural forces, now that factories are once more built by running water in lonely valleys, the difference in appearance, which formerly was so marked, begins to fade away and enables us to see the identity of the underlying principle. There was more difference between a spinning mill and a domestic workshop as they existed side by side between 1780 and 1800, than between a factory of that date and a modern one.

VII

It was difficult then to realize the whole importance of this change, the social results of which could not yet be foreseen. What struck people

¹⁷¹ See Ed. Butterworth, *History of Ashton-under-Lyne*, p. 82. This type of work was very common before 1785.

¹⁷² Schulze-Gavernitz, *Der Grossbetrieb* (French transl.), p. 58, compares this system with the one which existed for so long and which still exists to-day in the Saxon Oberland.

¹⁷³ Like the one organized at Derby by Leed and Strutt in 1773. See above, p. 218.

¹⁷⁴ J. Kennedy, *Rise and Progress of the Cotton Trade, Memoirs of the Literary and Philosophical Society of Manchester*, Series II., Vol. III., p. 126.

chiefly was the immediate material result: the birth of great undertakings, the unlimited growth of production, all that unprecedented development, which they could not but contrast with the stagnation of the traditional industries.¹⁷⁵ In 1795 John Aikin thus began his *Description of the Country from Thirty to Forty Miles round Manchester*: 'The centre we have chosen is that of the cotton manufacture, a branch of commerce, the rapid and prodigious increase of which is, perhaps, absolutely unprecedented in the annals of the trading nations.'¹⁷⁶ Some one else compared this sudden progress to the bursting forth of a hidden force.¹⁷⁷ Others refused to see anything more in it than an extraordinary, and perhaps a disastrous, accident. For England did not herself produce cotton, and must therefore buy it, and according to the theory of the balance of trade, all imports which were not compensated for by an equal or greater quantity of exports, were a loss to the country. For this reason it seemed impossible that the cotton industry should ever become a permanent asset to the wealth of the nation.¹⁷⁸

But, in order to form an idea of the progress that had been made already, we need not confine ourselves to such more or less arbitrary impressions and arguments. No statistics of production are available, but the consumption of raw material is shown by the figures of imports, recorded in the Custom House Registers. In 1701 the weight of raw cotton imported into Great Britain did not exceed a million pounds. Fifty years later it was scarcely three million. In 1771 it reached 4,760,000 lbs. and in 1781, 5,300,000. In the six following years the figures went up so quickly that we cannot wonder at the astonishment then felt by the public. By 1784 the 1781 figure was doubled (11,482,000 lbs.), and by 1789 it was six times as great (32,576,000 lbs.). A slackening followed on this rapid growth, which was resumed, however, after 1798. The import of cotton rose from 32 million lbs. to 43 million in 1799, to 56 million in 1800, and in 1802 to 60,500,000 lbs.: over thirty times what it was in the preceding century, when the competition between the cotton and the woollen trades was denounced as a national peril.¹⁷⁹ The export of manufactured goods developed on parallel lines. In 1780 it was still insignificant, and its total value did not reach £360,000. By 1785 it exceeded one million sterling, by 1792,

¹⁷⁵ 'The whole nation has observed it with wonder' *Thoughts on the Use of Machines in the Cotton Manufacture* (1780), p. 12.

¹⁷⁶ J. Aikin, *A Description of the Country from Thirty to Forty Miles round Manchester*, p. 2.

¹⁷⁷ 'The cotton manufacture, although generally believed to be very extensive, yet the magnitude of this trade, and the national advantages derived from such a combination of human labour with ingenious machinery, can scarce be supposed to have made an impression equal to the importance of the object, because the progress has been rapid beyond example. It has burst forth, as it were, upon the country in a moment' *An Important Crisis in the Calico and Muslin Manufactures* (1788), p. 1.

¹⁷⁸ 'Cotton can be no staple' See *The Contrast, or a Comparison between our Woollen, Silk and Cotton Manufactures* (1782).

¹⁷⁹ See *Journals of the House of Commons*, LVIII, 889, 892, 894; MacCulloch, *Dictionary of Commerce*, article 'Cotton'; Ed. Baines' *History of the Cotton Manufacture*, pp. 215-16.

two million; in 1800, five and a half million, in 1802, £7,800,000,¹⁸⁰ more than twenty times the value of British cotton goods exported twenty-two years before.

Let us look more closely at the curve of the movement. Its general upwards direction is by no means uniform. Between 1780 and 1800 it shows, at almost regular intervals, depressions which correspond with as many industrial crises. Two, at any rate, of these crises were serious. In 1788-89 most of the new factories had to dismiss part of their hands, and some even had to close down. Distress prevailed in Lancashire and Cheshire villages, where the jenny had become the inhabitants' chief source of income.¹⁸¹ In 1793 the situation was even more serious: about a dozen cotton spinners went bankrupt,¹⁸² and the import of raw material fell suddenly from 35 to 19 million lbs. It is true that each one of these crises was followed by renewed activity, as was stated by a manufacturer who had been through the whole period of the formation of the British cotton industry: 'I have seen a great many overthrows in the cotton manufacture. In 1788 I thought it was never to recover. In 1793 it got another blow, and in 1803 again, and in 1810, but every time that it received a blow, the rebound was quite wonderful.'¹⁸³

The curious recurrence of these crises, coupled with the vigorous growth both before and after each one of them, at once suggests a simple explanation. Are these not the earliest instances of over-production due to machine industry? And have we not thus at its very birth hit on one of the most characteristic features of the modern factory system? We know already that more yarn was spun than could be woven in the country, and the fall in prices, due to the new methods of manufacture, was thereby greatly increased. No 100 cotton yarn, which, in 1786, was still worth 38s. a pound, by 1788 was only worth 35s., by 1793 only 15s., by 1800 only 9s 5d., and by 1804 only 7s. 10d.¹⁸⁴ No doubt this fall did increase the consumption both in England and on the continent. But the supply increased more rapidly than the demand. Machinery was gaining ground, and new undertakings were springing up everywhere. As prices fell, cotton spinners, in order to maintain their profits, had to produce ever larger quantities of yarn, which only added to the congestion of the market. Under the circumstances periodical

¹⁸⁰ Ed. Baines, *op. cit.*, pp. 349-50

¹⁸¹ 'The utmost distress prevails among the cotton spinners in many of the populous towns in Lancashire and Cheshire, who spin upon the jennies.' *An Important Crisis in the Calico and Muslin Manufactures*, p. 23. 'In the course of the last twelve months, the petitions have been compelled to discharge a great number of the men, women and children which they employed at that business, the mills in general have been reduced to half work some have been totally abandoned in consequence of the stagnation of trade.' *Journals of the House of Commons*, XLIV, 544-45. See Patrick Colquhoun, *A Representation of the Facts relative to the Rise and Progress of the Cotton Manufacture in Great Britain* (1789), pp. 3 and foll.

¹⁸² Wheeler, *Manchester*, p. 244.

¹⁸³ A. Ure, *Philosophy of Manufactures*, p. 441.

¹⁸⁴ E. Baines, *History of the Cotton Manufacture*, p. 357.

collapse was inevitable. And when the ruin of a number of firms, the forced slowing down of machinery, and unemployment of part of the population, had brought production down to its normal level, then a fresh period of prosperity would set in, to be followed after a few years by another catastrophe, the same causes bringing about the same consequences.

Such is the explanation which would be given of these recurring crises, if we allowed ourselves to indulge in hasty generalizing. The next step would be to look for an economic law accounting for this periodic recurrence. But anyone who realizes the great complexity of the facts, even in this early stage when they had not attained their full development, will not be satisfied with so simple and abstract an explanation. For a more careful study of each of these crises shows that over-production does not sufficiently account for their appearance. That of 1788 is, in fact, the only one of which this explanation can be given, for it occurred very soon after the great expansion of the industry which took place as soon as Arkwright's patent was cancelled, after that period of feverish activity and unbounded speculation, when hundreds of undertakings, both great and small, had been set up all over the country, and when the humblest manufacturer had entertained hopes of success and wealth. That the cause of the crisis was clear to the cotton spinners is sufficiently shown by their attacks against the importation of Indian goods¹⁸⁵ the English market was becoming too small: 'there was,' as they rather naively expressed it, 'a want of consumption.'¹⁸⁶ This was only another way of saying that too much was being offered for sale, that there was, in fact, over-production. In 1793 the case was quite different. To begin with, the crisis was not confined to the cotton industry, nor even to those industries whose system of production had recently undergone great changes. It was a general crisis. The total number of bankruptcies in the United Kingdom, whose annual average between 1780 and 1792 was not more than 530, rose, in 1793, to over 1,300.¹⁸⁷ It would be impossible to attribute this general disaster to the still very limited influence of machine industry and large-scale production. It began, as a matter of fact (and this explains its universal character) by a financial crisis. In February, 1793 several important

¹⁸⁵ *An Important Crisis in the Calico and Muslin Manufacture*, pp. 12–13. The unpublished memorandum preserved at the French Foreign Office under the title of *Considérations sur les manufactures de mousseline de callico dans la Grande Bretagne*, describes those complaints and admits their being founded. The author seems to have been inspired by the pamphlet we have just referred to (*Mémoires et documents*, Angleterre, LXXIV, fol. 182–92).

¹⁸⁶ Patrick Colquhoun, *A Representation of Facts relating to the Rise and Progress of the Cotton Manufacture in Great Britain*, p. 4. On the crisis of 1788, see G. Unwin, *Samuel Oldknow and the Arkwrights*, pp. 85–102 (original letters exchanged between S. Oldknow, S. Salte, Richard Arkwright Jun., etc.).

¹⁸⁷ G. Chalmers, *Estimate of the Comparative Strength of Great Britain*, p. 291. See Francis, *History of the Bank of England*, pp. 213–15, and Macpherson, *Annals of Commerce*, III, 261 and foll. Of those 1,300 bankruptcies very few affected the cotton trade (thirteen according to Wheeler, *Manchester*, p. 244).

banks stopped payment. This caused great nervousness, and a few weeks later brought about the failure of about a hundred provincial banks.¹⁸⁸ A general panic broke out. No more credit was given, and people hid their money at the bottom of their chests, 'terror created distrust, distrust impeded circulation.'¹⁸⁹ Transactions were reduced to a bare minimum. Goods were left in the shops, not because there were too many for the usual consumption, but only because no one would buy. The remedy, too, was a financial one. After having talked the matter over with the chief London bankers, Pitt decided to issue Treasury bonds up to five million sterling.¹⁹⁰ This step, which threw non-depreciated securities into the market, helped to re-establish confidence and to restore credit. From that moment matters slowly re-adjusted themselves and gradually reverted to their normal state.

What was the cause of this financial crisis? Was it the war with France, which broke out at the beginning of February? War certainly made matters worse; but it did not create the trouble, since its first symptoms had been discernible a year before.¹⁹¹ The most alarming of these was the depreciation of the notes issued for an excessive amount by the county banks. How was it that these banks, so few of which existed forty years before, had increased far beyond the real needs of the country? In order to find the reason we must turn to that great economic movement in which all England was taking part, and in which not only industry, but agriculture and trade, both at home and abroad, were equally involved.¹⁹² Side by side with the opening of new factories, estates were changing hands, and fresh lines of communication were opened from one end of the kingdom to the other. The reader will remember the 'canal fever' which raged after 1792, the multifarious schemes and hastily established undertakings to which speculation lent artificial and ephemeral vitality. In short, the 1793 crisis seems to us to have been the outcome of a combination of many inter-connected facts, and the extent of its effects can be easily explained by the complexity of its causes. In the language of modern business, the 'crash' succeeded the 'boom', a sudden depression was caused by an abnormal expansion of trade. Over-production was only one manifestation of this expansion, in the same way as machinery was only one of the factors in the industrial revolution. The early history of the

¹⁸⁸ Macpherson, *Annals of Commerce*, III, 266, Chalmers, *op. cit.*, p. 226.

¹⁸⁹ Chalmers, *op. cit.*, p. 291.

¹⁹⁰ See Report from the Select Committee on the State of Commercial Credit, *Parliamentary History*, LXX, 740-66, *Journals of the House of Commons*, XLVIII, 702-7.

¹⁹¹ W. Ederson, in his *Address to Spinners and Manufacturers of Cotton Wool upon the Present Situation of the Market* (1792), complains of the state of the market, of the fluctuations of prices, due, according to him, to speculation.

¹⁹² The above considerations do not substantially differ from the conclusion arrived at by Dr. Bouniatian, although he does not confine the use of the word over-production to purely industrial phenomena, but extends it to any excessive expansion of trade (M. Bouniatian, *Geschichte der Handelskrisen in England*, chap V, pp. 151-72). The same book should be consulted on the crises of 1783 (pp. 144-50), 1797 and 1799 (pp. 173-99).

cotton manufacture should not be separated from that of the more general development in which it was included, and its various stages interest us in so far as they announce or accompany those of a greater and more general growth. But they do not account for that growth as a whole. Moreover, as is the case with any fact taken separately, they were surrounded by many circumstances, which should be eliminated before the underlying law can be discovered.

VIII

If this law does not stand out clearly, it is because too many adventitious elements combine to alter and complicate it. By these we do not only mean accidental happenings, such as good or bad harvests, the peace of 1783 or the war of 1793, but also the many forms of official intervention—regulations, fixation of prices, tariffs and prohibitions, which, more tightly than to-day, held fast the whole economic life of the country as in a fine-meshed net. Even the cotton industry, whatever may have been said to the contrary, did not escape the bonds of official protection and constraint. To a certain extent it benefited by the one, while it had often to contend with the other. As soon as the doctrine of *laissez-faire* had established itself, it became the fashion to say that this industry, which had in so few years become the most flourishing in the country, owed everything to liberty.¹⁹³ This statement cannot be unreservedly accepted. We must above all draw a distinction between tariffs, which were based upon the theory of mercantilism, and regulations originating in mediaeval tradition.

Nothing is less accurate than to say that the English cotton manufacture grew up without any artificial defence in the face of foreign competition. For the very prohibitions, which had nearly stopped the early growth of that industry, were later used for its protection. The import of printed cottons from whatever source remained forbidden.¹⁹⁴ No protection could be more complete, for it gave the manufacturers a real monopoly of the home market. The prohibition did not extend to yarns or undyed materials, and the East India Company continued to import certain foreign materials into England, such as muslins from Decca, famous for their fineness. But the English manufacturers very soon began to raise protests against this, for they meant to be protected. They repeatedly sent in petitions to ask that a duty should be levied on all materials of foreign origin, and in the end they had their way.¹⁹⁵

¹⁹³ See Ed. Baines, *History of the Cotton Manufacture*, pp. 321 and foll.; Schulze-Gavernitz, *Der Grossbetrieb* (French transl.), p. 40; Leone-Levi, *History of British Commerce*, p. 24.

¹⁹⁴ 'As the law now stands, no printed cotton, other than the manufacture of Britain, can be worn in this Kingdom. The wear of all others is forbidden by positive statute. The cotton therefore enjoys a monopoly over the whole island; the law admits no rival to it.' *Parliamentary History*, XVII, 1155.

¹⁹⁵ The details of the various tariffs is given by Baines, *History of the Cotton Manufacture*, pp. 322-31. Between 1787 and 1813 the duties were raised from 16 5 per cent. to 85 per cent. *ad valorem* for calicoes, and from 18 per cent. to 44 per cent. for muslins. On the frequent appeals of the cotton manufacturers for protection, see E. Helm, *Chapters in the History of the Manchester Chamber of Commerce*, pp. 17, 22, etc.

And not only was the home market reserved for them, but steps were taken to help to them gain markets abroad. A bounty was given on every exported roll of calico or muslin,¹⁹⁶ a privilege that might have been considered unnecessary, seeing that, from the technical point of view, England had a twenty-five or thirty years' start over all continental countries.

So great was the superiority of English production that neighbouring countries could hardly have kept out English goods save by a policy of strict prohibition, which, as a matter of fact, they never adopted. Before the great wars of the French Revolution and of the Empire disturbed the whole economic life of Europe, opinion tended, if not to free trade, as it was understood by the Cobdens and Brights of the following century, at any rate to commercial treaties, and to international agreements founded on mutual concessions. The Anglo-French treaty of 1786 is the most interesting example of this policy. One of its results was to throw open the French market to Manchester and Paisley goods. It is true that in return cotton materials manufactured in France were, for the first time, admitted into England.¹⁹⁷ But this system of reciprocity could not fail to benefit chiefly the country which, thanks to its technical progress, could produce a greater quantity of goods at a lower price.

This, it will be said, was the result of free competition. But English manufacturers had not yet learnt to substitute this new formula for the old protectionist tradition. They were still suspicious of free trade, even when it was to their advantage. This attitude is illustrated by the campaign waged against the export of yarns. Some spinners, like William Radcliffe, actually refused to sell to foreign buyers.¹⁹⁸ At several meetings held at Manchester in 1800 and 1801, they vehemently denounced 'that baneful practice, which threatened the English cotton manufacture with complete ruin.' The Board of Trade was approached with a view to obtaining complete prohibition, or at any rate severe restrictions, of the export of yarns.¹⁹⁹ Only the vigorous opposition of several influential manufacturers, including Sir Robert Peel, prevented these

¹⁹⁶ 21 Geo. III, c. 40 and 23 Geo. III, c. 21. This bounty varied from $\frac{1}{2}d.$ to $1\frac{1}{2}d.$ a yard, according to the quality of the material. See *Journals of the House of Commons*, XXXVIII, 465, and XXXIX, 294, 387.

¹⁹⁷ See De Clercq, *Recueil des Traités de la France*, I, 146–65, and *Parliamentary History*, XXVI, 233–54, Art. VI, parag. 7 'All sorts of cotton manufactured in the dominions of the two Sovereigns in Europe, and also woollens, whether knot or woven, including hosiery, shall pay, in both countries, an import duty of twelve per cent *ad valorem*' For the Parliamentary debates on the ratification of the treaty, see *ibid.*, pp. 381–514 (House of Commons) and 534–96 (House of Lords). A special study of the treaty has been made by E. Dumas (*Etude sur le Traité de Commerce de 1786 entre la France et l'Angleterre*) (1904).

¹⁹⁸ Radcliffe, *Origin of the New System of Manufacture*, pp. 10–11.

¹⁹⁹ Many pamphlets were published dealing with this subject. See *A Letter to the Inhabitants of Manchester on the Exportation of Cotton Twist* (Manchester, 1800), *A Second Letter to the Inhabitants of Manchester on the Exportation of Cotton Twist*, by Mercator, *Observations founded upon Facts on the Propriety or Impropriety of exporting Cotton Twist, for the Purpose of being manufactured into Cloth by Foreigners* (London, 1803); *A View of the Cotton Manufactories in France* (Manchester, 1803).

measures being actually put into force.²⁰⁰ So the export of yarns was still permitted, though other protective measures were either introduced or maintained. For many years a law against the employment of English workmen abroad had been in force.²⁰¹ Its regulations were specially renewed for the benefit of the cotton industry, and very strictly enforced.²⁰² As for the new machinery, stern measures were enacted to prevent its exportation to foreign countries. An Act passed as early as 1774 made it an offense to export 'tools or utensils used in manufacturing cotton or cotton and linen mixed.'²⁰³ Another Act, in 1781, extended the same prohibition to sketches, models or specifications.²⁰⁴

Such a state of things was indeed very different from freedom of trade as defined later by the liberal school of political economy—that is, complete mobility of goods and labour spontaneously moving to wherever the highest wages or profits are to be found. If it be true that the history of the cotton industry can provide arguments for the doctrine of *laissez-faire*, these will certainly not be found during this early period, in which we see nothing but a struggle between contradictory and half-conscious tendencies. But this very contradiction shows that fresh wants were growing up and were beginning to be felt. They grew up all the quicker because they had not to break down too many habits and traditions.

The fact is that, with regard to this new industry, the government had no definite policy at all. It did not at first think of it as anything but a new source of wealth, which could supply revenue to the State. When, in 1784, Pitt wanted to find some more money to balance his budget, he bethought himself of increasing the excise duty on cotton materials. For when he considered the flourishing state of the cotton industry, its eighty thousand workers, and the many fortunes made by millowners, he felt that it could easily bear more taxation.²⁰⁵ The new tax was therefore decided on.²⁰⁶ The extent and power of the interests which had grown up with the industry were shown by what followed. A chorus of lamentations arose. Lancashire manufacturers of calicoes

²⁰⁰ W Radcliffe, *op cit*, p 163.

²⁰¹ 5 Geo I, c. 27. For a first offence the employer was given 3 months' imprisonment and £100 fine; for further offences 12 months' imprisonment and such fine as the Court would think fit to impose. If a workman settled abroad he was warned by the Embassy and had to go home within six months. If he did not do so he ceased to be a British subject and all his property in England was confiscated.

²⁰² 22 Geo III, c. 60 (1782). The penalties were as much as £500 fine and one year of imprisonment and for further offences £1,000 and 5 years. The export of tools or machinery was punished by a fine of £500. On sentences given against German subjects in 1785 and 1786 see Wheeler, *Manchester*, p 171.

²⁰³ 14 Geo III, c. 71.

²⁰⁴ 21 Geo III, c. 37. Similar legislation was enacted for the metal trades in 1785 and 1786 (25 Geo III, c. 67, and 26 Geo III, c. 89) and a General Act was passed in 1795 (35 Geo III, c. 38). See W. Bowden, *Industrial Society in England towards the End of the Eighteenth Century*, pp. 130–31.

²⁰⁵ Speech of April 20th, 1785, *Parl. Hist.*, XXV, 481. See the report of the Committee of Ways and Means in 1784, *Journals of the House of Commons*, XL, 410.

²⁰⁶ 24 Geo III, c. 40. Each roll of calico, muslin, etc., had to pay, when bleached, dyed or printed, a tax of 1d a yard if its value was less than 2s a yard, and of 2d if its value was over 2s. This tax was in addition to the previous excise duty of 3d per yard.

and fustians, Glasgow and Paisley manufacturers of muslins, weavers, printers, and dyers all sent petitions to Parliament.²⁰⁷ A Committee to get the new taxes repealed was set up in Manchester.²⁰⁸ This Committee organized an agitation in the affected districts and sent delegates to London to approach both the government and the opposition. There was a debate in the House of Commons, when Fox and Sheridan spoke in defence of the manufacturers, and Pitt, after some resistance, gave way and did as he was asked.²⁰⁹ The delegates had a triumphal return to Manchester. A procession of two thousand people turned out to meet them, in which every branch of the cotton industry was represented, carrying banners with topical mottoes: 'Let Commerce flourish for ever! Freedom restored! May Industry never be cramped!'²¹⁰

But was liberty the real object of that movement? To justify their protest against the imposition of a burdensome tax, the cotton manufacturers needed no other principle than that of self-interest, as it has been understood in all ages and under all systems of government.²¹¹ The intervention of the Whig party was the only thing which might have created some illusions in the matter. For the first time, it came out as the defender, or rather as the ally, of large-scale industry. But this alliance, which later was to throw such a weight into the political scales, had not yet become definite. The Tory government had still many partisans among the Northern manufacturers. Sir Robert Peel was both an admirer and a personal friend of William Pitt.

From the very beginning there was, however, one sphere in which the history of the factory system and of free trade were one, namely the sphere of production. Manufacturing regulations, gild statutes, and even Acts of Parliament, such as the Statute of Apprentices of 1563,²¹² had always been measures with special and limited applications, they only applied to one or more specified trades. By the very fact of its novelty, any recently created industry was beyond their hold, and unless it became in its turn the subject of special regulations, it could grow up in complete freedom. This was the case in the cotton manufacture. We

²⁰⁷ 'If these laws are allowed to continue, they will go far in extirpating these branches, particularly the British muslins, and the cotton machinery . . . The hazards and inconveniences attending the introduction of a new branch of trade are manifestly obvious, and the necessary and unavoidable struggle to bring the same to perfection point out, in strong colours, the cruelty of disturbing infant manufactures in their progress to maturity.' *Journals of the House of Commons*, XL, 484 and 748. See also pp 749, 760, 768, 780, 835.

²⁰⁸ See *A Report of the Receipts and Disbursements of the Committee of the Fustian Trade, Manchester*, 1786.

²⁰⁹ *Parliamentary History*, XXXV, 478-91.

²¹⁰ Owen MSS., LXXX, 7, Wheeler, *Manchester*, p. 170.

²¹¹ We must refer, however, to a pamphlet of 1785, *Manufactures improper Subjects of Taxation*, in which the argument for the cotton industry assumes the appearance of a general theory.

²¹² 5 Eliz., c. 4. Article XXV mentions land labourers; Article XXVII, haberdashers, drapers, goldsmiths, embroiderers, ironmongers; Article XXIX, blacksmiths, wheelwrights, ploughwrights, millwrights, carpenters, masons, plasterers, sawyers, lime burners, brick makers, brick layers, tile-makers, linen-weavers, turners, cowpers, millers, potters, weavers 'weaving huswives or house-hold cloth only and none other cloth,' fullers, distillers and thatchers. We follow the order, or rather the disorder, of the original text.

have seen the difficulties in spite of which it found a footing in England, where it was at first treated as a foreign industry. By the time that its existence had become recognized and authorized, the old industrial legislation, if not quite discredited, had at any rate become much weaker. In the woollen industry it had great difficulty in coping with smuggling, and it was in vain that penalties were increased, and that a system of mutual spying was set up among manufacturers.²¹³ It was useless to make the meshes of the net finer, for it was impossible to arrest the stream which continued to pour through it. Adam Smith, who, on so many points, was far in advance of his time, on this subject merely gave expression to a growing feeling²¹⁴ It was hard enough to maintain the old regulations, and it was becoming quite impossible to set up new ones. Thus, from its birth, the cotton industry was free of the heavy yoke which weighed on the older industries. No regulations prescribed the length, the breadth or the quality of its materials, or imposed or forbade methods of manufacture. There was no control save that of individual interest and of competition. Because of this, machinery quickly came into general use, bold ventures were made, and many kinds of goods were manufactured. There was the same freedom with regard to labour. Neither the trade gild, with its time-honoured traditions, nor the system of apprenticeship with its strict rules, ever existed in the cotton industry. This condition of things made it easier to recruit labour for the factories, but it also accounts for certain grievances which we shall have to record.

This internal freedom is the one thing modern industry cannot do without. As soon as that is taken away industry ceases to move, and movement is its basic law: continual change, irresistibly carried forward by technical progress, and continual expansion, which shows itself in the increase of production and the extension of markets. This change and this expansion, though bound up with one another, are two quite separate phenomena, and, though either can start the other, yet logically the second follows from the first. In the same way economic freedom takes two different shapes, freedom of production and freedom of exchange. Without freedom of production, large-scale industry was impossible, and the justifiable restrictions which have been imposed on

²¹³ 17 Geo III, c. 2 (1777) set up general assemblies of manufacturers, who themselves selected committees, working under the Justices of the Peace. This institution which was first set up in Lancashire, Yorkshire and Cheshire, was in 1784 extended to Suffolk (24 Geo III, c 3), in 1785 to Huntingdon, Bedford, Northampton, Leicester, Rutland and Lincoln (25 Geo III, c 40), and in 1790 to Norfolk (30 Geo III, c 56)

²¹⁴ He was not alone in this respect. See James Anderson (*Observations on the Means of Promoting a Spirit of National Industry*), (1777), p 428. 'If it be difficult for gentlemen of ordinary station to acquire a perfect knowledge of the details of mechanical arts, it is surely more difficult still for Ministers of State and others in the highest departments of civil affairs, to attain a perfect knowledge of these *minutiae*, so that when they assume to themselves a sort of dictatorial power, and prescribe rules for regulating the practice of individuals, they descend from their own sphere and enter upon another, in which it is impossible they can have a sufficient degree of knowledge to be certain that they are acting with propriety, or that they frequently do hurt to the particular art they meant to encourage'

it have never questioned that fundamental necessity. Freedom of exchange developed later and in a more halting way. If it is a feature of the new world created by the industrial revolution, it certainly was not among the early factors which went to its formation.

IX

From the cotton manufacture the use of machinery spread in a very short while to all the other textile industries. We shall confine ourselves to describing shortly the principal stages of its development in one of these, the most important as well as the most ancient and the most traditional of all. The slow evolution which, in the woollen industry, was imperceptibly developing capitalistic organization, received a sudden impulse, against which the combined forces of interest and tradition were to prove powerless.

One of the main causes which held back the progress of this industry was the fact that it was so scattered. Every little technical improvement, before it reached the small country workshops, took years to spread from town to town, and from village to village. The fly shuttle did not reach the country districts of Wiltshire and Somerset till seventy years after the date of its invention.²¹⁵ Until the end of the eighteenth century, the history of the woollen industry remained essentially provincial and local. Even the industrial revolution assumed in that industry the aspect of a local event, for it took place almost wholly in one district, exclusively to its advantage, and enabled it to remain the chief centre of the English woollen industry to this day. There, in that small area stand the cities of Leeds, Bradford, Huddersfield and Halifax, whose fame has long since consigned to oblivion the towns of the East and South-west, Norwich and Colchester, Frome and Tiverton.

Two different and opposite explanations have been given of these contrasting fortunes. According to M. Laurent-Dechesne, the woollen industry developed in Yorkshire because wages were lower than in the southern counties.²¹⁶ According to Dr. Cunningham, it was the rise of wages in Yorkshire which forced the manufacturers to use machinery, while in the South the comparative cheapness of labour made them

²¹⁵ Report from the Committee to whom the Petition of several Persons concerned in the Woollen Trade of Somerset, Wilts and Gloucester was referred (1803), Journals of the House of Commons, LVIII, 884-85 Th Joyce, a weaver at Freshford (Somerset), declares 'that he does not use the spring shuttle, but it was introduced about two years ago by a person who had been in the North of England to work.' The fly shuttle made its appearance at Stroud in 1795, to the great alarm of the weavers. Webb MSS, *Textiles*, V, 1

²¹⁶ Laurent-Dechesne, *L'Evolution économique et sociale de l'Industrie de la Laine en Angleterre*, pp. 108-11 He quotes the following figures A weaver's wages in 1771 at Norwich 7*s*, at Leeds 6*s* 3*d*, in 1790 Norwich 11*s*, Bradford 10*s* These figures are somewhat higher than those given by Arthur Young, *Southern Counties*, p. 65, and *North of England*, I, 137

careless of technical improvements.²¹⁷ This contradiction is only an apparent one, for the two statements, in fact, relate the two distinct and successive stages. Manufacturers who had been first drawn to Yorkshire by the cheapness of labour, had to raise wages as the prosperity of their industry increased, chiefly because of the competition in the labour market of the cotton industry in the neighbouring counties of Derby and Lancashire.²¹⁸ They thereupon tried to increase their profits by making use of the machinery to which the competing industry owed its then unrivalled progress.

Above all, the prosperity of the West Riding must be attributed to its position and its contact with the new centres of industrial life. Once it was established, new advantages made themselves felt and made the future of the industry secure. The upper reaches of the Yorkshire rivers have as much water and power as those on the other side of the watershed. Their pure water, which has been used for many years in fulling and finishing cloth, turned the wheels of the first spinning mills.²¹⁹ Later on, when the steam engine replaced hydraulic power, Yorkshire found fresh wealth in its rich coal deposits, which in some places lay at an inconsiderable depth. Thus every phase in industrial progress brought fresh prosperity to this favoured spot, whilst on the other hand it made more and more inevitable the decay of other districts, with less running water and no coal. Whilst water was still the driving power of machinery, those districts could continue to hold their own, but the use of steam finally ruined them. About 1785 the Norwich woollen manufacture was still prosperous. Business had improved after the bad crisis caused by the American war, and there seemed every indication of a future which would be worthy of the city's past record.²²⁰ But only a few years later Eden observed various symptoms of decay. Manufacturers were dissatisfied, and wages were very low.²²¹ That industry has now entirely disappeared, and Norwich, once so well known for

²¹⁷ W. Cunningham, *Growth of English Industry and Commerce*, II, 462 (2nd edition not repeated in the following editions). What cannot be disputed is that the industrial importance of the West Riding had begun before machinery was introduced into the woollen manufacture. The growing prosperity of its towns between 1770 and 1780 is witnessed by the erection of Cloth Halls (Bradford Piece Hall, 1773; Colne Piece Hall, 1775, Tanney Hall, Wakefield, 1776, Manufacturers' Hall, Halifax, 1779) *Victoria History of the County of York*, II, 417-19.

²¹⁸ In Halifax, female spinners who in 1770 were paid at the rate of 5d or 6d. a day, received in 1791 1s. 3d to 1s 4d *Ibid.* (3rd edition), II, 657.

²¹⁹ Another advantage was 'the possession of a population which could not produce by tillage of the bleak slopes all that was necessary for sustenance, and which, by the inherited skill of generations, was especially suited for industrial work.' H. Heaton, *Yorkshire Woollen and Worsted Industries*, p. 281.

²²⁰ 'The manufacture in the last two centuries has been constantly increasing in importance, but at no time has it been so thriving as it is now *callimancoes* go to Germany, Poland and Spain; *camlets* to Flanders, Spain, the West Indies and South America.' A. and F. de la Rochefoucault-Liancourt, *Voyage en Suffolk et Norfolk*, II, letter dated Sept 24th, 1784. We must not trust quite unreservedly to the admiring descriptions of young travellers: according to J. James, *History of the Worsted Manufacture*, p. 270, the decline of Norwich had begun about 1760.

²²¹ Eden, *State of the Poor*, II, 477.

her fine worsted goods, has no more spinning or weaving mills. Their place has been taken by the manufacture of foodstuffs, while the worsted industry has migrated to the North, particularly to Bradford, whose population, in one century, increased from 13,000 to 200,000.

The jenny, the simplest of all spinning machines, was used in Yorkshire about 1773,²²² a few years only after its invention, but its use does not seem to have been very general before 1785, that is before the time when, in the cotton industry, it was already being supplanted by the mule and the water frame.²²³ As in Lancashire, and for similar reasons, it was for some time unpopular. Riots against machinery broke out in 1780 in Leeds, only a few months after Arkwright's factory at Chorley was burnt down.²²⁴ But this hostility was serious and lasting only with the workmen, who feared a fall in wages. On the contrary, the jenny was welcomed by the master spinners, of whom there were so many in the West Riding, for it enabled them to increase the output of their workshops without making any alterations in their traditional organization. Far from favouring the progress of capitalism, the jenny seemed to have provided the small master with a new weapon with which to safeguard his independence. This was the secret of its success in a country which was, above all others, the home of small-scale industry.

In the South-West, the merchant manufacturers, having little technical knowledge, did not realize how much their interests hinged on a rapid change of equipment, and how much they were to lose by having put it off until it was too late. So long as the operatives carried out their prescribed duties for a fixed wage, they felt sure of their profits, the implements and the methods of manufacture being left for the men to choose according to their preferences or their habits. A few isolated attempts were made at Tiverton, at Shepton Mallet and at Leicester,²²⁵ but they met, as we should expect, with the usual hostility from the workers. It was only after 1790, when the competition of the Northern towns became alarming, that the people of Devonshire and Wiltshire, of Somerset and Gloucester,²²⁶ finally made up their minds to the use of the jenny. But it was too late. In Yorkshire, spinning mills with automatic equipment had already made their appearance, and these very soon made impossible the position of the manual worker, who was bound to the antiquated methods of cottage industry.

²²² *Report from the Committee on the State of the Woollen Manufacture* (1806), p. 113

²²³ *Ibid.*, p. 73. Technical reasons probably account for the delay. 'It arose partly from the weakness of the material, which broke more readily than cotton when subjected to any strain.' J. L. and B. Hammond, *The Skilled Labourer*, p. 145

²²⁴ *Ibid.*, p. 81.

²²⁵ Lt.-Col. Harding, *History of Tiverton*, I, 198; *The humble Petition of the poor Spinners in the Town and County of Leicester* (1787); Webb MSS., *Textiles*, V, 1

²²⁶ Between 1790 and 1794 at Frome, Shepton and Taunton. Before 1791 at Barnstaple, *Annals of Agriculture*, XV, 494, and G. Billingsley, *A General View of the Agriculture in the County of Somerset*, pp. 90 and 167.

The first of the great Yorkshire spinners was Benjamin Gott, of Leeds.²²⁷ He began his career when Arkwright was ending his. He did not meet with the same difficulties, and found it unnecessary to pass himself off as an inventor. He had only to be an intelligent capitalist, guided by the light of a neighbouring industry. His business seems to have rapidly become very important: he had a good supply of capital and was therefore able to set up two large factories in the suburbs of Leeds. He carried out there all sorts of experiments, which it would have been too difficult or too expensive for smaller men to undertake: for instance, he tried the most recent methods of chemical dyeing. His success was immediate and decisive. In order to meet the demand, which grew even more quickly than the supply, Gott soon found himself, like the Lancashire manufacturers, compelled to resort to night work, and the machines, several of which were worked by steam, often worked for four days on end.²²⁸ Very few years elapsed before Gott found himself with many rivals. Among those who, in the first years of the eighteenth century, founded the most active and prosperous businesses, we must mention Fisher, Holbeck, Brook of Pudsey, and William Hirst of Leeds, who boasted that he had been the first man to use the mule in spinning wool.²²⁹

Most of these men were cloth merchants who had become manufacturers. The very position of their factories suggests it. Leeds, round which they were gathered, had never, until then, been looked upon as an important manufacturing centre, but rather as a commercial one, a market to which all the weavers from the surrounding villages came to sell their cloth. Now they were to come to Leeds as workers in a master's workshop. While in the south-western counties the encroachments of capital on the producer's independence had been slow and gradual, in Yorkshire they were felt all at once, and in an unmistakable manner. The small manufacturers saw the danger. A petition which, as early as 1794, they presented to the House of Commons, put their case with remarkable foresight. After pointing out the advantages of the system of cottage industry, as it had existed till then in the West Riding, they went on to say:

'This system, which so fortunately for the trade in general, the individuals concerned in it, and the public at large, has so happily long prevailed in Yorkshire, is now in danger of being broken in upon, and destroyed, by the introduction of the modes which have prevailed in

²²⁷ J. Bischoff, *A Comprehensive History of the Woollen and Worsted Manufacture*, I, 315

²²⁸ *Report on the Woollen Manufacture* (1806), pp. 43, 72, 76, 118, 445; *Abridgments of Specifications relating to the Steam Engine*, I, 106

²²⁹ *Ibid.*, pp. 45, 71; W. Hirst, *History of the Woollen Trade during the last Sixty Years*, p. 39. The first worsted mill in Yorkshire was established at Addingham near Skipton in 1787, motive power being supplied by the river Wharfe. There was no spinning mill in Bradford before 1794. *Victoria History of the County of York*, II, 421. Marshall's great linen factory, which in 1806 employed nearly 1,100 workmen, was founded about the same time. On the introduction of machinery into the linen industry, see A. Warden, *The Linen Trade*, pp. 690-93.

other parts of the Kingdom, where the inconveniences and mischiefs resulting from it have been frequently and most severely felt; which modes are founded on monopoly erected and supported by great capitalists, and set on foot by that description of persons concerned in the woollen trade in Yorkshire, called cloth merchants, becoming cloth makers; and of late several such merchants in and near the towns of Leeds and Halifax, in the said Riding, have commenced clothiers, or cloth makers, and others have manifested a disposition to follow their example, by establishing large factories for making woollen cloth. And the consequence of this procedure must, as the petitioners believe, be highly prejudicial to them, who, with a very trifling capital, aided by the unremitting labour of themselves, their wives, and children, united under one roof, decently and independently have maintained themselves and families. . . . And from this comfortable and independent situation, should such innovation prevail, the petitioners must separate from their families, and be reduced to a state of servitude, to gain bread for themselves and their dearest relatives.²³⁰

They did not confine themselves to vain complaints, but implored Parliament to defend them from the competition of the great manufacturers. Accustomed as they were, to the legal protection which at all times had been so generously extended to the woollen trade, such a request seemed to them quite natural. They succeeded in getting a bill introduced which forbade cloth merchants to open workshops²³¹ This bill was an anachronism, for the type of legislation to which it belonged was becoming obsolete, and was very soon to lose what little strength it had left. The bill was thrown out, like the bill which sought to enforce the old apprenticeship regulations, like those against the use of machinery, which the workers were always clamouring for, and like all those others by which it was attempted to revive an almost forsaken policy. But the small Yorkshire manufacturers persisted in their resistance. One of them, Robert Cookson, advocated in 1804 the passing of an Act similar to that of 1557, which limited the number of looms to be owned by any one employer.²³² It was only after repeated rebuffs that they finally gave up the attempt to persuade the public authorities to intervene in favour of domestic industry and against the factory system.

The dangers which they anticipated did not, as a matter of fact, seem very imminent. In 1806, the Parliamentary Commission in charge of

²³⁰ *Journals of the House of Commons*, XLIX, 275-76

²³¹ *Ibid.*, 432. It was to be supplemented by local regulations laid down by the cloth halls in each town. Aikin refers to this effort and adds 'It is evident that merchants concentrating in themselves the whole process of a manufactory, from the raw wool to the finished piece, have an advantage over those who permit the article to pass through a variety of hands, each of which takes a profit. This some persons in the vicinity of Leeds now see, and are adopting the same plan. . . . Numbers of the small manufacturers, who made perhaps a piece in a week, find it more advantageous to work at those factories, where their ingenuity is well rewarded.' J. Aikin, *A Description of the Country from Thirty to Forty Miles round Manchester*, p. 565.

²³² *Journals of the House of Commons*, LIX, 226.

a general inquiry into the condition of the woollen industry found that the number of manufacturers had not diminished. Eighteen hundred still had their places reserved in one or other of the cloth halls at Leeds.²³³ Moreover, in spite of the competition of the factories, the bulk of the trade was still in their hands. In 1803 only one-sixteenth of all the pieces of cloth woven in the West Riding was produced by large factories, controlled by capitalists. All the rest, about 430,000 pieces, came from the workshops of master weavers.²³⁴

These figures are most significant, for they show the fight which this old industry put up against the same change which had taken place so easily and so completely in the cotton manufacture. There was still much vitality in thousands of small independent businesses, and it took a long time before they were finally absorbed or suppressed. Indeed, many of them survived until the middle of the nineteenth century.²³⁵ But this was only possible when they adapted themselves, as far as they could, to the new conditions of production. Machine industry gradually permeated, before it finally destroyed, them. About 1800 the Yorkshire manufacturers were almost all using the jenny or the mule for spinning and the fly shuttle for weaving. Carding, too, was done by machinery, but in special workshops to which the master workman, who did not own the necessary implements himself, sent his raw wool, in the same way as, from time immemorial, he had sent his cloth to the fulling mills.²³⁶ In this way a fusion, or rather a temporary compromise, was come to between manual work and machinery, between small- and large-scale industry.

In the worsted industry, capitalist organization had not waited for the introduction of machinery. But there the manufacturers had to take the wool-combers into account, as their technical skill and their strong organization enabled them to be exacting in their demands. Their clubs, which had branches all over England, helped them when they had to move about, or in case of unemployment.²³⁷ Their frequent strikes were often successful, for it was difficult, if not impossible, to do without them, and they made their employers feel it.

²³³ *Report from the Committee on the State of the Woollen Manufacture in England* (1806), p. 8. But many of them only earned a bare subsistence wage and often got into debt. *Ibid.*, p. 75.

²³⁴ *Report on the State of the Woollen Manufacture* (1806), p. 11. J. Bischoff, *History of the Woollen Manufacture*, II, table 4

²³⁵ In 1851 the Huddersfield Cloth Hall was still patronized by 287 small manufacturers Laurent-Déchesne, *Évolution économique et sociale de l'Industrie de la Laine en Angleterre*, pp. 65 and 71.

²³⁶ *Report on the State of the Woollen Manufacture* (1806), p. 446. 'I believe the number of mills, which I would call domestic mills, manufacturers' mills, in the district I am acquainted with, have been increased more than three times, perhaps more than four times, those which I speak of are the mills to which the domestic clothiers resort. . . . Whenever I go into the country I find a new mill, or a small steam engine erected wherever there is any water, on the smallest brook they erect a wheel to carry two or three engines; they have erected machines up to a thirty horse engine, principally for scribbling and carding.'

²³⁷ See William Toplis' petition to the House of Commons (1794), *Journals of the House of Commons*, XLIX, 395

At certain times a mere threat to stop work was enough to force concessions from the employer, which he would never have granted of his own accord, so that the wool-combers had succeeded in gaining for themselves a higher rate of pay than any other class of workers in the woollen trade, up to 28s. a week.²³⁸ The invention of the combing machine completely altered this condition of things.

This invention was Cartwright's achievement.²³⁹ It was brought out five years after the power loom, and the needs it was intended to meet were no less urgent, but, like the earlier invention, it was not immediately made use of. It did not, in fact, come into general use until much later, between 1825 and 1840,²⁴⁰ but its existence was enough to set a limit to the extortions of the wool-combers. Their apprehension of its subsequent effect is shown by the desperate efforts they made to secure its prohibition.²⁴¹ Manufacturers, having now such an infallible weapon at their disposal, appear to have thought that they could hold it in reserve, and spare themselves the expense of setting up an elaborate plant worked by water wheels or by steam engines. Yet Cartwright had set forth the advantages of his invention in the most convincing language: 'A set of machinery consisting of three machines will require the attendance of an overseer and ten children, and will comb a pack, or 240 lb. in twelve hours. As neither fire nor oil is necessary for machine combing, the saving of those articles, even of fire alone, will in general pay the wages of the overseer and the children, so that the actual saving to the manufacturer is the whole of what the combing costs by the old imperfect method of hand-combing.'²⁴² The first factory to use the combing machine was the one which was managed by the inventor himself at Doncaster, not far from Sheffield. The machine was nicknamed 'Big Ben' after a popular prize-fighter, because its jerky motion reminded people of a boxer's action.²⁴³ It was still imperfect, and could not deal equally well with various qualities of wool. The disappointment felt by the manufacturers who used it before it had been improved is perhaps a sufficient explanation of the delay in its final success.²⁴⁴ It was, nevertheless, in use in a good many factories by the beginning of the nineteenth century, especially round Nottingham.

²³⁸ *Ibid*

²³⁹ See *Memoir of Edmund Cartwright*, pp. 99 and foll., J. Bischoff, *History of the Woollen Manufacture*, I, 316 and foll.; J. James, *History of the Worsted Manufacture*, pp. 555–56; and J. Burnley, *Wool and Woolcombing*, pp. 114 and foll.

²⁴⁰ See Cunningham, *Growth of English Industry and Commerce*, II, 761.

²⁴¹ Over forty petitions were sent by the workmen to Parliament. The employers retaliated with counter petitions drawn up by a Committee formed for the purpose, the 'Worsted Committee.'

²⁴² J. Burnley, *Wool and Woolcombing*, pp. 114–15.

²⁴³ *Memoir of Edmund Cartwright*, p. 106. The word is found in the song which was made up by a workman on the day the machine was first used, and which is quoted by Burnley, *op. cit.*, p. 126.

²⁴⁴ *Id., ibid.*, p. 127.

and Bradford.²⁴⁵ For this change, like all the earlier ones, was to benefit chiefly the towns of the Midlands and the North. When in 1794 Garnett introduced the mule and Ramsbotham the combing machine²⁴⁶ into Bradford, it was still a sleepy little town with grass growing in the streets.²⁴⁷ Ten years later it already had several large factories²⁴⁸ and was becoming a dangerous rival to the ancient industry of Norwich.

By then the superiority of the Northern industrial centres was so firmly established that they were held up as examples to the rest of England: 'If the experiment of twenty years already in the use of spinning by water at Manchester has produced such general employment and activity there, as that hardly any person can be found in want of employ; and if in Yorkshire, by dint of such machines and engines, they not only use all their wool, but send down into the West Country and buy it up out of the very mouths of the wool dealers and clothiers; then it must necessarily follow that the general introduction and use of them in the Western Counties, and every other part of the Kingdom also, must be advantageous to the poor, and likewise eventually to the community at large.'²⁴⁹ What Yorkshire was to the backward districts of Devonshire and Norfolk, Lancashire was to Yorkshire. For the cotton industry continued to lead the way for all the other textile industries. 'In my humble opinion', a manufacturer wrote in 1804, 'the woollen cannot too closely follow the steps of the cotton trade: that nation which brings forth its goods the best and the cheapest will always have a preference, and it is only by means of the adoption of every possible improvement that pre-eminence can be secured.'²⁵⁰

But in order to do this, the first step was to change the whole spirit which still ruled this time-honoured industry. The tradition of extreme protection which bound it to routine had to be destroyed, and it became necessary to do away with the antiquated legislation still in force, with the old system of apprenticeship, strictly regulating the recruiting of labour, as well as with the trade regulations, which made it difficult to introduce new equipment and to abandon obsolete methods of production: 'In the beginning of the nineteenth century it would be a gratifying circumstance to have old prejudices removed, and to see a committee of the House of Commons occupied in clearing the Statute Book of all the Acts concerning that important manufacture. . . . Thus would it be at once freed from the fetters which have so long bound it, and

²⁴⁵ *Report on the Woolcomber's Petitions* (1794), pp. 5 and foll., and *Journals of the House of Commons*, LVI, 272.

²⁴⁶ Id., *sibid.*, p. 222. Garnett was the founder of one of the great manufacturing families of the district. Id., *History of the Worsted Manufacture*, pp. 328-29.

²⁴⁷ J. James, *Continuation to the History of Bradford*, p. 91.

²⁴⁸ Id., *sibid.*, p. 366, and *History of Bradford*, p. 283.

²⁴⁹ *Wool Encouraged without Exportation* (1791), pp. 69-70.

²⁵⁰ *Observations on the Cotton Weavers Act* (1804), p. 20.

henceforward its operations would go on as unconstrained as those of another trade, which has risen to at least an equal magnitude, without being scarcely noticed on the Journals of either House of Parliament.' The fulfilment of this wish was soon to remove the last obstacle in the path of the industrial revolution.